

Defining Modernities

Interpretations of Cultural Modernity in the Southern African Middle Stone Age



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Preface

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Contents

Preface.....	II
Contents	IV
List of figures.....	VI
List of tables.....	VI
Abbreviations.....	VII
Glossary	VII
1. Introduction	1
2. Research History.....	11
The History of Research on Cultural Modernity	11
A South African Research Tradition.....	13
Cultural Modernity and the Current Dispute	15
3. Theoretical Framework and Methodology	17
Theoretical Framework.....	17
Methodology – Discourse Analysis	20
4. Case Studies.....	23
5. Analysis of Case Studies	25
Blombos Cave, Cape Coast.....	25
Diepkloof Rock Shelter, Western Cape	30
Klasies River Mouth, Eastern Cape Coast	35
Pinnacle Point, Eastern Cape Coast	40
Sibudu Cave, Eastern Cape Coast.....	44
Summary of Analysis.....	48
6. Discussion.....	50
Symbolic Behaviour.....	50
Advanced Social Behaviour.....	57

Defining Modernities

Advanced Technological Behaviour.....	60
Advanced Subsistence Behaviour.....	67
7. Concluding Remarks	71
8. References	76

List of figures

Figure 1: A selection of MSA sites used to argue for cultural modernity.

Letters ‘A’ to ‘E’ represent case studies.....24

List of tables

Table 1: A variety of traits describing cultural modernity, and descriptions
of their features.....1

Table 2: A variety of terms applied to describe cultural modernity.....3

Table 3: A selection of archaeological sites, demonstrating the range
of the current dispute over cultural modernity in
the southern African MSA.....4

Table 4: Outline of nodal points connected to cultural modernity
at specific case studies. The nodal points are contracted
terms of widely cited features of cultural modernity.....50

Abbreviations

Kya – Thousand years ago

ESA – Early Stone Age, the time from the first tools produced by early humans 2,5 million years ago, until the emergence of *Homo sapiens sapiens* about 200 kya.

MSA – Middle Stone Age, 200 kya, until *Homo sapiens sapiens* expanded out of Africa approximately 50 kya.

LSA – Late Stone Age, the time after 50 kya.

Glossary

Technocomplex – “Defined as a group of industries characterised by assemblages that share a polythetic range (a context or a class of things having many, but not all properties in common). Each of the industries in the group includes different types of the same general family of artefacts, but they all share a widely diffused and interlinked response to common factors in the social and physical environment, economy and technology” (Lombard, et al. 2012:124). Definition from David L. Clarke’s *Analytical Archaeology* (1968).

Stillbay – MSA technocomplex commonly said to last approximately from 77 to 70 kya.

Howiesons Poort – MSA technocomplex commonly said to last approximately from 65 to 59 kya.

Fossiles Directeurs – Leading artefacts, artefacts defining a techno-complex, only procured within the actual techno-complex.

Bifacial Points – *Fossiles directeurs* of the Stillbay.

Backed Segments (Crescents) – *Fossiles directeurs* of the Howieson Poort.

1. Introduction

Twenty years ago a search in the literature on the African Middle Stone Age (MSA), 200 000 – 50 000 years ago (kya), would have produced little on the development of behaviour in early anatomically modern humans, *Homo sapiens sapiens*. MSA research mostly had an Anatomical and technological focus (e.g. Foley 1987; Klein 1976; Rightmire 1978; Singer and Wymer 1982; Thackeray 1988). A widely cited theory (e.g. Bar-Yosef 2002; Leakey 1994:80; Mellars 1989; Stringer, et al. 1989) was that the early populations of the MSA were not cognitively capable of the suite of mental operations humans are today, including creation of art, abstract thought, advanced technologies, and so on (see table 1).

Table 1: A variety of traits describing cultural modernity, and descriptions of their features.

Traits describing cultural modernity	Description	Examples of references
Abstract patterns/objects, use of pigments, symbolism	“Symbolic material culture that [...] integrates socially shared symbolic meaning” (d’Errico and Henshilwood 2011:50)	(d’Errico, et al. 2005; d’Errico, et al. 2012; d’Errico, et al. 2013; Henshilwood and d’Errico 2011b; Henshilwood, et al. 2009; Mackay and Welz 2008; Texier, et al. 2010; Texier, et al. 2013; Vanhaeren, et al. 2013; Watts 2010)
Advanced behaviour or complex cognition, seen in production of tools and technological standardizations	Behaviour that “involve[s] language (in itself symbolic), abstract thought, and capacity for novel, sustained multilevel operations” (Wadley 2011:98).	(Conard, et al. 2012; Högberg and Larsson 2011; Pelegrin 2009; Wadley 2011; Will, et al. 2014; Wurz 1999, 2008, 2011)
Social organization and exchange	Intra-social organization demanding language and structure, and extra-social exchange demanding shared group mentalities.	(Deacon 2001; Knight 2010; Parkington, et al. 2013; Porraz, et al. 2013; Texier, et al. 2010)

Defining Modernities

Lithic raw material acquisition, treatment and deposition	Non-locally acquired raw materials, heat treatment for adapted lithic production, and deposition of tools.	(Albert and Marean 2012; Avery, et al. 2008; Coulson, et al. 2011; Nash, et al. 2013)
Bone tools	Worked bone and antler tools.	(Backwell, et al. 2008; Henshilwood, et al. 2001)
Advanced hunting techniques (Traps, bow and arrow)	(Indirect) Evidence of hunting techniques demanding foresight and an ability to keep objects “out of sight, but not out of mind”.	(Wadley 2010, 2011)
Processes of technological change, adaptation	Technological differences demonstrating stylistic standardization in archaeological phases outside clear techno-complexes such as Stillbay and Howiesons Poort.	(Conard, et al. 2012; Högberg and Larsson 2011; Will, et al. 2014; Wurz 2008)
Food procurement	Archaeological evidence demonstrating an ability to procure food from a variety of sources, e.g. marine foraging	(Albert and Marean 2012; Avery, et al. 2008; Jerardino and Marean 2010; Klein, et al. 2004; Marean 2010; Marean, et al. 2010; Wurz 2011)

The type of behaviour mentioned above was believed to not emerge any earlier than 40 kya, during the Upper Palaeolithic in Europe. From this point on in time there is a rapid emergence of new technology and figurative and pictorial art in the archaeological record, such as cave paintings located in France (e.g. Chauvet, et al. 1996), figurines from present day Germany (e.g. Nelson 2008), and advanced forms of technology such as bone tools (Mellars 1989; White 1982:169). This change in the archaeological record was connected to a change in human behaviour towards *cultural modernity*, recognized as the Upper Palaeolithic Revolution (Bar-Yosef 2002; Klein 2009:684-720).

Cultural modernity is one of many terms aimed to describe fully human cognitive abilities (see Table 2). These cognitive abilities are recognised in the archaeological record in

Defining Modernities

a variety of ways (see table 1). Cultural modernity refers to a point in time when humans cognitively evolved to present day's mental levels (Conard 2010:2671). Lyn Wadley (2001:201) further defines cultural modernity specifically as the ability to store information outside the human brain.

Table 2: A variety of terms applied to describe cultural modernity

Terms applied to describe cultural modernity	Examples of references
Symbolically mediated behaviour	(d'Errico and Henshilwood 2011; Henshilwood, et al. 2009; Wurz 1999)
Symbolic behaviour	(d'Errico, et al. 2005; Henshilwood, et al. 2001; Wurz 1999)
Modern (human) behaviour	(d'Errico, et al. 2012:942; Henshilwood, et al. 2001; Henshilwood, et al. 2009; Henshilwood and Marean 2003; Jerardino and Marean 2010; Texier, et al. 2010; Thompson and Henshilwood 2014; Wurz 2008)
Behavioural modernity	(Conard 2008; Deacon 2008:148; Henshilwood, et al. 2001; Texier, et al. 2010; Vanhaeren, et al. 2013:500)
Symbolic material culture	(d'Errico, et al. 2012:942)
Modern humans	(Deacon 1992, 2001; Klein 1995, 2013; McCall 2006)
Human behaviour	(Mackay and Welz 2008)
Modern Cognition	(Wynn and Coolidge 2009, 2011)
Complex Cognition	(Wadley 2011)

Towards the end of the 1990's the Upper Palaeolithic Revolution was challenged by several articles (Bar-Yosef 2002; Deacon 2001; Henshilwood, et al. 2001; Henshilwood, et al. 2002; Wadley 2001; Wurz 1999), some more significant than others (McBrearty and Brooks 2000). The Upper Palaeolithic Revolution was here argued to exist on the basis of a negligence of evidence for cultural modernity from the southern African MSA, as well as a variety of other geographical areas and datings. The connection between development of cultural traits and anatomical evolution had earlier been questioned (Mellars 1989), and it seemed now that the southern African MSA contained several types of artefacts demonstrating cultural modernity, generally dated to sometime between 70 - 140 kya (e.g. Henshilwood, et al. 2001; Wurz 1999, 2002). This pushed the dating of such behaviour at least 30 000 years back in time. Southern Africa quickly became the leading geographical area of research on the emergence of cultural modernity in the MSA, seen in the number of South African projects in table 3, as well as the argued centre of the development of these traits (e.g. Deacon 2001; Henshilwood, et al. 2001; Henshilwood, et al. 2002; Wadley 2001).

Defining Modernities

Table 3: A selection of archaeological sites, demonstrating the range of the current dispute over cultural modernity in the southern African MSA.

Archaeological Project	Datings of finds connected to cultural modernity	Location	Finds connected to cultural modernity	Features of cultural modernity present	References
Blombos Cave	77 kya	South Africa	Ochre (some engraved), beads, bone tools	Behavioural modernity, symbolism	(d'Errico, et al. 2005; d'Errico, et al. 2013; Henshilwood, et al. 2001; Henshilwood 2005; Henshilwood and d'Errico 2011b; Henshilwood, et al. 2011; Henshilwood, et al. 2009; C. S. Henshilwood, et al. 2001; Hodgson 2014; Vanhaeren, et al. 2013)
Diepkloof Shelter	60 kya	South Africa	Ostrich Eggshell (some engraved)	Behavioural modernity, symbolism, intra social identities, extra social contact	(Laure Dayet, et al. 2013; L. Dayet, et al. 2013; Miller, et al. 2013; Parkinson, et al. 2013; Porraz, et al. 2013; Texier, et al. 2013; Porraz, et al. 2008; Texier, et al. 2010; Texier, et al. 2013)
Klasies Mouth	70 – 140 kya	South Africa	Lithics, human remains, bone tools	Behavioural modernity, technological complexity, symbolism, technological standardization	(Churchill, et al. 1996; Corruccini 1992; d'Errico, et al. 2012; Deacon 2008; McCall 2006; Villa, et al. 2010; Wurz 1999, 2002, 2008)
Pinnacle Point	90 – 164 kya	South Africa	Human remains, shellfish, tools	Technological complexity, complex hafting and food gathering technologies, technological adaptation and standardization	(Albert and Marean 2012; Jerardino and Marean 2010; Marean 2010; Marean, et al. 2010; Schoville 2010; Watts 2010)

Defining Modernities

Sibudu Cave	60 kya	South Africa	Lithics, bone tools, fauna	Technological complexity, Cognitive complexity, indirect evidence of traps + bow and arrow, technological adaptation and standardization	(Backwell, et al. 2008; Conard, et al. 2012; Peña and Wadley 2014; Villa, et al. 2005; Wadley 2010, 2011; Will, et al. 2014)
Apollo 11	63 – 71 kya	Namibia	Lithics, ostrich eggshell	Lithic technology, portable containers	(Vogelsang, et al. 2010)
Erb Tanks	45 – 130 kya	Namibia	Lithics	Lithic technology, technological adaptation and standardization	(Mccall, et al. 2011)
Hollow Rockshelter	72 – 80 kya	South Africa	Lithics	Behavioural Modernity, social interaction, experimentation.	(Höberg and Larsson 2011)
Hoedjiespunt	MSA	South Africa	Lithics, Marine fauna, ochre	Lithic technology, ochre manufacturing, adaptation, marine foraging	(Will, et al. 2014; Will, et al. 2013)
Klein Kliphuis	50 – 80 kya	South Africa	Ochre (some engraved)	Speculations in behavioural modernity, variety, transition and adaptation	(Mackay 2011; Mackay and Welz 2008)
Klipdrift Shelter	59 – 65 kya	South Africa	Lithics, fauna, ostrich eggshell (some engraved)	Processes of change, technological and stylistic (tools and engravings) connections with other sites in the area	(Henshilwood, et al. 2014)

Defining Modernities

					(Blombos, Diepkloof etc.)	
Tsodilo Hills	54,2 – 94,3 kya	Botswana	Lithics	Rituals, procurement distant sources	material from	(Coulson, et al. 2011; Nash, et al. 2013; Staurset 2014)
Ysterfontein	MSA	South Africa	Mollusks, shell, marine fauna	Ineffective foraging, population, no cultural modernity, subsistence	marine small	(Avery, et al. 2008; Halkett, et al. 2003; Steele and Klein 2008)

After this change a new set of behavioural features were included in cultural modernity, and traced in a variety of archaeological materials (see table 3). This introduced new questions and discussions, concerning the disputed contents of cultural behaviour. Both symbolic and utilitarian objects were argued to demonstrate cultural modernity (e.g. d'Errico, et al. 2005; Deacon 2001; Halkett, et al. 2003; Henshilwood, et al. 2001; Henshilwood, et al. 2002; C. S. Henshilwood, et al. 2001; Klein, et al. 2004; Villa, et al. 2005; Wadley 2001; Wurz 1999, 2002). The dispute now concerned whether cultural modernity developed in the southern African MSA, and if it developed as a complete package or in stages (Henshilwood, et al. 2009; Klein 2008, 2013; Texier, et al. 2010).

Cultural modernity is chosen here as a working term to centre the dispute. Any of the terms in Table 2 (such as symbolism or modern human behaviour) would suffice, but I argue for the applicability of cultural modernity. Both Conard (2010:7622) and Wadley (2001:201, 203) apply a material focus in their definitions of cultural modernity. Cultural modernity describes behavioural patterns, but also underlines the role of the archaeological material; the kind of behaviour attributed to populations at a given time is dependent on the cultural material that is actually preserved, and the interpretation of this. A term such as 'modern behaviour' suggests that behaviour is being examined *per se*. Cultural modernity on the other hand, emphasizes the focus of interpreting modernity from all aspects of culture recognised in the archaeological record, which is the partly remains of a certain behaviour. The only part of behaviour that is observable is the behaviour embedded in the cultural remains. The variety of terms seen in table 2 are all applied to describe such behavioural patterns, but I choose to encompass all these within cultural modernity. I do not seek to redefine or change the behavioural contents of the term. What I do seek is to explore the contents and understandings of the term, and the creation of these contents.

To this day most of the materials interpreted to be mediators of a southern African emergence of cultural modernity in the MSA are within South Africa, supplemented by results from Namibia and Botswana (see table 3). The South African research is dominated by a range of different research traditions, spread across a number of projects. The projects are excavations consisting of a team of researchers, with a core of these publishing and providing argumentations for their evidence connected to cultural modernity. This produces practice communities. I define a practice community as a group of researchers with interdefined terms and unique explanations of certain results. This is elaborated in chapter 3 (theory), but in sum it is inspired by Sankey's (1993:771) definition of Kuhn's later use of incommensurability. As such, the practice communities are unique to each project (unless projects are collaborating and

applying the same methods and terms). Practice communities are not necessarily separate discourses; a discourse demands common understandings or explanations of (parts of) the world. Practice communities have unique ways of reaching these (common) understandings and explanations (Jørgensen and Phillips 1999:9). Researchers and research traditions are linked to, but not dependent on, these practice communities. If the personnel changes at a project, the practice community persists unless the new personnel represents an emergence of new terms and arguments.

This thesis is addressing the dispute over cultural modernity, exemplified by five South African archaeological projects, used as case studies. These are listed as the topmost five projects in table 3. This dispute includes arguments from archaeological projects directly connected to the material argued to prove cultural modernity, in addition to arguments from a wider context. This wider context is the full context of the dispute, arguments supporting or disagreeing with cultural modernity in the southern African MSA. These arguments might be from archaeology, or other disciplines. In other words, all arguments that contribute to the understanding of cultural modernity.

The focus of this thesis is to examine whether practice communities have an impact upon the understanding of cultural modernity in the MSA of South Africa, and whether disagreements from the wider context are constituted by these different contents. To do this I have picked five South African archaeological projects as case studies. These are all coastal excavations (Eastern and Western Cape coast), and central within the dispute. Each one is providing varying contents to cultural modernity (see table 3). These five sites are demonstrating unique practice communities and a variety of archaeological materials, results, and interpretations. On the other hand, all argue for cultural modernity within the South African MSA. They are as such good examples of a strong characteristic of the field, as all MSA projects in southern Africa provide contents to cultural modernity, not regarding the kind of material finds (exemplified by table 3). These contents are often unlike each other, and imbued with different meanings (see table 1, for an alternative table see Henshilwood and Marean (2003)). Certain critics argue against cultural modernity in the MSA, but likewise contribute to both the dispute and the understanding of cultural modernity (Klein 2008, 2013). It is my intention to explore the archaeological process of interpretation at each of these specific sites, to trace the connection within each practice community between interpretation and contribution to cultural modernity. Following this, I examine how the different provided contents of cultural

modernity are discussed in the wider context. This is summed up in the following research questions:

What role do practice communities play for the understanding of cultural modernity in the South African MSA?

- How are specific practice communities connected to different contents of cultural modernity?
- How are these contents of cultural modernity understood in a wider context?

To examine these research questions the thesis consists of two main parts. Chapter five, *Analysis of case studies*, contains the examination of each case study, a description of each practice community's results and contribution to cultural modernity. The different contributions to cultural modernity are described in table 3, but during the analysis the case studies and their results are connected to these general features of cultural modernity. During chapter six, *Discussion*, the results of the analysis are discussed in relation to the wider context. The case studies and their connection to the contents of cultural modernity are explored in the full scope of the dispute. Particular selected discussions, and arguments against these contributions as evidence for cultural modernity, are addressed. Whether the different perceptions of the contents of cultural modernity is substantial enough to make them a potential basis of the dispute is explored.

To examine these questions discourse analysis is applied. This is a tool to analyse the specific projects, their characteristics and their way towards interpretation. A discourse is defined as "a certain way to describe and understand the world (or parts of it)" (Jørgensen and Phillips 1999:9, my translation) The view that cultural modernity developed in southern Africa in the MSA is one such discourse, represented by the chosen case studies and practice communities. Discourse analysis is firmly rooted in social constructivism, and I apply the principles of epistemology to argue for the potential of research traditions playing decisive roles in the dispute. Epistemology is a branch within social constructivism that acknowledges certain truths as objectively factual, but at the same time admits the importance of different world views. It states that it is not reality that is socially constructed, but our perception and presentation of this reality. Through these points I examine one discourse in the current dispute, with the practice communities of my case studies acting within the discourse and providing different contents to cultural modernity. This provides an answer to *how specific practice communities are connected to different contents of cultural modernity*.

These contents are then examined in the wider context, characterized by several discourses, by applying nodal points. Jørgensen and Phillips (1999) define nodal points as privileged points of discussion within a dispute. Several discourses seek to define these points. Such points can be exemplified by e.g. *symbolism*. This is a term that might play different roles for the understanding of cultural modernity as it is defined by different discourses. The results of the analysis, the specific contents of cultural modernity presented at each case study, are the nodal points that are transferred to the discussion. The focus in the discussion is how discourses from the wider context assign different meaning to the nodal points, and how this affects cultural modernity. Further, it is explored whether the different arguments within these nodal points, containing different meanings, are incommensurable. Incommensurability is defined as the impossibility of two factors to be compared, due to a lack of common standards (Kuhn 2000:36). Thus, incommensurability and epistemology works to explore the potential challenges of the dispute as situated in the argumentations rather than in the archaeological materials. This will answer to *how the contents of cultural modernity are understood in a wider context*.

The dispute over cultural modernity is influenced by a range of fields applying different arguments and models of explanations to the development of cultural modernity. It is my intention to examine the consequences of a current dispute in such a varied context. If the dispute is not unified, and if incommensurability is present, this will represent challenges for productive discussions within the dispute. The dispute is in an important phase; the research on cultural modernity in the southern African MSA has been ongoing for more than a decade without making the field any less varied, despite an accumulation of both material evidence and discussions. As such, it is examined whether the variations will continue to create challenges.

This thesis is mainly a literary study, and the literature consists of publications connected to the case studies. In addition, there will be sources from the wider context, consisting of selected opposing views on MSA cultural modernity. The analysis of the case studies will be limited to the process of interpretation, and the arguments for cultural modernity in the MSA. The actual process of excavation is not included as a decisive factor, as this is similar at each project. As such, it is possible to examine the various outcomes of the interpretation process alone. An archaeological project usually contains several sites, but my focus on publications and practice communities makes the separation of these irrelevant, as the results from all the sites are published by the practice community at the project in question.

2. Research History

In this chapter I will highlight parts of the research history that have impacted upon the understanding and research on cultural modernity. First, I will make a general overview of the way cultural modernity was researched earlier, before I explain the archaeological research within South Africa under the apartheid regime. I wish to clarify that the potential for discussion upon these themes is high, but it is my intention to try to clarify how cultural modernity have earlier been discussed or agreed upon. Additionally, the practice communities working at the case studies are connected in some part to the mixed research traditions of South Africa and the international interest the research on cultural modernity has generated.

The History of Research on Cultural Modernity

The general consensus during the early 20th century was that modern humans were western European in origins (e.g. Leakey 1981). To a high degree, this was based on a linear cultural evolutionary development; based on recovered pre-historic technology it was the general idea that culture had developed from simple to complex stages. Beginning with savage African stages and ending with the modern western civilization. Not only had Africa skipped stages such as the bronze age, but certain regions also lacked the later stages of the development (Stahl 2005:4-10). Africa was thus left out of the research on cultural modernity.

African archaeology was dominated by European researchers during and after colonial times, meaning that all of the ideas and views surrounding African archaeology were essentially European (Barham and Mitchell 2008:8; Connah 2013:23-24; Marean and Assefa 2005:106). An increased focus on the archaeology and prehistory of Africa as an entity in its own emerged in the 1920s. During the following years the focus on African prehistory increased. African prehistory was put in its own context, as the terms Early (ESA), Middle (MSA), and Late Stone Age (LSA) emerged, and researchers such as Mary and Louis Leakey initiated excavations at Olduvai Gorge in Tanzania. However, the African Stone Age periods were in part tightly connected to European research and the way earlier African archaeology had worked to support European evolutionary timelines. The ESA, MSA and LSA were African equivalents to the European Lower, Middle, and Upper Palaeolithic. Despite new ways of thinking, material variation followed European culture historical patterns of diffusion and migration, leaving little room for a separate African archaeology, both theoretical and practical (Barham and Mitchell 2008:9). A lack of values surrounding the research on (pre-) historic

times among African societies may be cited as a reason for this, as this was to a large degree brought by foreign researchers (Stahl 2005:10-13).

After the Second World War, African evidence such as the Taung Child and other *australopithecines* were acknowledged as hominids. The resources towards the research on human evolution and modernity increased, and East Africa became a centre of research on the emergence of anatomically modern humans. A heavy presence of European research still existed, and despite more East African archaeologists, an African tradition in itself hardly existed (Barham and Mitchell 2008:6-15). During these years the Upper Palaeolithic Revolution became the main explanation for the development of cultural modernity, as opposed to anatomical modernity; Early African finds of *Homo sapiens* resembled modern humans, but did not display cultural modernity. Their culture was seemingly missing symbolic objects, advanced tool making and social systems. This type of behaviour was first observable in the archaeological assemblages of the European Upper Palaeolithic. This distinction created a gap between the first anatomically modern humans, some 200 kya, and the humans who first demonstrated abilities that represented cultural modernity, seen as a behavioural revolution 40 kya. The Neanderthals were also part of this discussion, and were perceived as behaviourally inferior and archaic compared to the modern *Homo sapiens*.

In the 1960's a set of new views on archaeological methods emerged in the USA, and spread mainly to Great Britain and to some degree Scandinavia. The New Archaeology, as became its name, was in extremely general terms a more systematic way of doing archaeology. The goal was often a more scientific archaeology, focused on general patterns of development, but acknowledging individual differences (e.g. Binford 1987; Johnson 2010:21-34). New Archaeology was a reaction to previous research methods, which often consisted of an accumulation of objects and, supposedly in turn, an accumulation of knowledge. Although archaeological features such as technology was investigated in a new way, new archaeology did little to change the results of linear interpretations of developments. Following New Archaeology, or processual archaeology as it was later named, post-processual archaeology emerged in the 1980's; an even more multifaceted and varied set of theories. However, a general disbelief in systems and processes is clear. Methods turned towards anthropology, and a greater focus on the viewpoint of the archaeologists themselves was emphasized, as well as the individual as an independent actor (e.g. Hodder 1985, 1998; Johnsen and Olsen 1992). The interpretation of behaviour developed through these ideas, from being visible only on the societal level to being interpreted in individual tools and expressions. The focus upon

individuals opened up for new methodologies and results, and had consequences for how cultural modernity was later interpreted on the African continent.

Alongside, but not necessarily connected to, these theoretical shifts is the French *Chaîne Opératoire*, defined by Mark Edmonds (1990:57) as “a framework for describing the structure or logic of specific sequences of action in material, temporal and spatial terms”. This methodology developed in line with new views on the individual as active and variable agents within a society, instead of an individual constituted by its surroundings (Barham and Mitchell 2008:6-15; Johnson 2010:105-116; Sellet 1993; Soressi and Geneste 2011:334-335). Individual and advanced actions were now possible to trace in production sequences of e.g. lithic material. Both this methodology and general interpretations of behaviour in utilitarian items did with time lead to the arguments that cultural modernity was visible in new material categories. Visibly, these shifts towards individuals were connected to the presence of external researchers within African archaeology, and *Chaîne Opératoire* is still occasionally applied in the current dispute.

These shifts culminated in the late 1990s, as the general consensus of modern human behaviour having its beginnings in Upper Palaeolithic Europe was challenged. Pieces of evidence of southern African MSA symbolism appeared, and a focus on cultural modernity in the African MSA record emerged (C. S. Henshilwood, et al. 2001; McBrearty and Brooks 2000; Wurz 1999). This happened much in connection with the general ideas and methodologies emerging at the time. The Upper Palaeolithic revolution was no longer as revolutionary, and discussions began, especially concerning detailed analysis of individual actions, and thoughts concerning the possibility of cultural modernity appearing in Africa at an earlier date. The archaeology and researchers responsible for this shift were to a high degree from southern Africa, see table 3, and South Africa became the centre of the research.

A South African Research Tradition

The South African research tradition is characterized by specific challenges. During the apartheid regime South African research was isolated and suppressed by the rest of the world. Boycotts against the apartheid regime led to South African research literature being published within the country alone, or South African researchers being banned from international congresses (Ucko 1987). Despite these obstacles, several South African archaeologists were not only doing archaeology on the Middle Stone Age people of South Africa, which were regularly inhibited by the government, but were also applying archaeological evidence as a

direct protest against the apartheid regime (Shepherd 2002). The challenges connected to apartheid were obstructive for a productive practice worldwide, but within South Africa, a strong focus appeared. Researchers were hoping to use archaeology against apartheid, a regime that did not favour an objective research on the early black population of Africa. In the words of Martin Hall:

“In order to make [such] an impact, archaeological research must be good - field work must be technically thorough, taking advantage of methods and interpretations that have been developed in the world at large” (Hall 1988:64).

This view is reflected in the literature from the apartheid Era, the quality and thoroughness is evident (e.g. Deacon and Geleijnse 1988; Deacon 1977; Kaplan 1989; Klein 1976; Singer and Wymer 1982; Thackeray 1988; Wendt 1976). All this despite biased scientific views and paradoxes of economic support (Connah 2013:25-27; Shepherd 2003:842). The South African research tradition has strong roots in a somewhat hostile environment, and has emerged as scientifically solid.

Even though discussions were produced concerning rituals and social behaviour in the Late Stone Age (Wadley 1989), and research on the Middle Stone Age yielded much of the same materials and views as the debate of today, there was no focus on Africa as the centre of the emergence of cultural modernity (Churchill, et al. 1996; Klein 1976; Thackeray 1988). Evidence of art was acknowledged, but then from the LSA or the very late part of the MSA, when cultural modernity was already believed to exist in Europe (Wendt 1976). The archaeology of the MSA was thorough, and yielded results concerning the technological traditions of the time, but no results were connected to cultural modernity (Deacon 1977; Kaplan 1989). The sudden and geographically concentrated emergence of symbolism in the European record was to a degree possible to prove by excluding (not necessarily actively) archaeological records from outside of Europe (d'Errico and Stringer 2011:1061).

Much of the (politically) excluded southern African material originated in periods that could be attributed to the Stillbay and Howiesons Poort techno-complexes. These two periods occupy a special position in the MSA research as innovative and productive periods, visibly closer to the European Upper Palaeolithic archaeological record, but in comparison lacking clear and continuous representations of central categories (art, deliberate burials, grave goods, bone tools etc.). This partly led to behaviour demonstrated during the MSA being perceived as archaic. As a second consequence the material from outside of these techno-complexes have

historically been seen as representing devolutions of technology and behaviour, with the Stillbay and Howiesons Poort as the main periods being researched (Conard, et al. 2012:180; Villa, et al. 2005).

Under apartheid rule, researchers in South Africa often achieved similar results to those from the European Upper Palaeolithic material, with no focus on cultural modernity in the MSA (Klein 1986; Rightmire 1978). Evidence of shellfish collecting in the MSA from the 1960's, to this day the oldest evidence of procurement of aquatic resources, was not linked to cultural modernity until fairly recently (Jerardino and Marean 2010; Klein 1976; Thackeray 1988). Bone tools share a similar story, as they were occasionally procured archaeologically, but not applied as arguments for cultural modernity until recently (Backwell, et al. 2008; Henshilwood, et al. 2001). Even in literature where the Eurocentric view on the Upper Palaeolithic Revolution is acknowledged, there is no discussion of southern African MSA materials. Richard Leakey (1994:103-104) mentions the European view on art, and compares with South African researcher's work with San culture, but despite the South African research during the time it is clear that symbolism in the MSA is not a question.

In the end of the 1990's new evidence of symbolism changed the way one perceived cultural modernity. With objects argued to contain symbolism, and tools argued to display cultural modernity, a new set of questions was raised. South Africa was no longer under apartheid rule, and the research was no longer inhibited. The debate then culminated in the form it has today, as contested evidence of cultural modernity from several South African sites was procured in the early 2000's. The research now had a stronger focus on earlier times; where the research from the apartheid era concentrated on later parts of the MSA, there was now a focus closer to 100 000 years ago, with a new behavioural view. The new evidence in many ways represented a continuation of South African archaeological practice, but the interpretative results changed, as there was no longer "a reluctance to consider that early modern populations in Africa exhibited a comparable level of behaviour" (Wurz 1999:39).

Cultural Modernity and the Current Dispute

Due to the change in the late 1990's, most of the research on the southern African MSA currently concerns the attribution of cultural modernity to this period, and all materials from this time and area are contributing either explicitly or implicitly to this question. Anatomical modernity is not in focus, as *Homo sapiens sapiens* is proved modern within the time in question, possibly as early as 200 kya (Rightmire and Deacon 2001:536). Within the dispute a

variety of terms are applied, as seen in table 2. These are sources of disagreements in themselves, and the application of terms such as ‘cultural modernity’ is proposed (Conard 2010), in addition to terms that in a higher degree represents variability and development (Shea 2011). Throughout this thesis I will rely on cultural modernity.

Although all terms ultimately describe the same behaviour and work within the same dispute, there are disagreements in the defining features of cultural modernity. The varieties of these features are demonstrated in table 1. These are the contents of cultural modernity, and at the present time they are argued to be present in a range of different materials.

The views of the current debate may be generally summarized as follows : (i) the general southern African view that cultural modernity emerged somewhat suddenly in the south of the African continent in line with anatomically modern *Homo sapiens*, (ii) the extreme opposite view of cultural modernity as a sudden emergence around 50-60 kya, and (iii) the views concerning cultural modernity as a process, either beginning in southern Africa and completing in Europe or as a “Mosaic Polycentric Modernity” (MBM) model (Conard 2008; d'Errico and Stringer 2011:1060-1061). I aim to demonstrate the uncertainties and disagreements of the debate, and discern the role of practice communities, as different contents and understandings are assigned to cultural modernity.

3. Theoretical Framework and Methodology

In the present chapter, I will go through a series of theoretical views and ideas that support the analysis and discussions of the case studies. The methodology applied is discourse analysis, which is connected to several theoretical fields. The theoretical framework is elaborated initially, to lay the foundations of terms and views applied in the methodology. In addition, the theoretical framework contains applicable views that will be more or less implicit throughout this thesis, while also supporting some of the more explicitly applied terms. The methodology is intended to demonstrate how I analyse literature, and how the results of the analyses will be used to discuss the understanding of cultural modernity.

Theoretical Framework

Discourse analysis is very much connected to constructivism, and certain features of this must be included here (Jørgensen and Phillips 1999:31, 34, 44-45). I rely on Søren Kjørup's (2008b:163-164) critical stance towards social constructivism; there is no need to disregard positivism and the truth of empirical evidence. Truths can exist, even though the terms surrounding them are socially constructed. Applying social constructivism on physical or biological facts is unnecessary. Stone tools are a fitting example as they are surrounded by (potentially presently unobservable) truths: the geology of their material, their use in previous societies, the actual prehistoric reason for their discard etc. An archaeologists' perception of these truths however, varies. Explanations for a phenomenon are always connected to the researcher on some level, no matter how close to the actual truth the explanation is. *Epistemology* demonstrates that it is our comprehension of reality that is constructed, not reality in itself (Kjørup 2008b:164). This idea opens for the notion that certain truths exist, but it also works within my line of inquiry as practice communities comprehend and present different models of explanation. This has potential to influence what facts are presented as truths about cultural modernity (e.g. d'Errico and Henshilwood 2011; Henshilwood and d'Errico 2011b; Wynn and Coolidge 2010, 2011). Cultural modernity developed in a certain way, which is objectively true and not dependent on the explanations offered by archaeologists. On the other hand, this development is unobservable, and must be interpreted from limited remains. Thus, the presented truth is dependent on the archaeologist. The absolute truth can theoretically be uncovered, but practically it is today highly reliant on the interpreters. This is a well-known

and discussed factor within archaeology (e.g. Binford 1987; Hodder 1985; Johnsen and Olsen 1992)

Throughout this thesis relativistic views are apparent, but again in line with the critical views of Søren Kjørup (2008a:130-143). A normal view by relativists is that historians (etc.) will never achieve an objective view of the past. All views of the historic past will thus contain the same amount of correctness. All that can be achieved today is a view of how history looks through modern eyes. What is true from one standpoint might be false from a different standpoint. This is in many instances what is being examined in this thesis through the case studies; to what degree are answers to the question concerning cultural modernity in the South African MSA dependent on the standpoint of the researcher? I choose to follow the views of Søren Kjørup because of his statement that some explanations of the past are better than others. Kjørup (2008a:131) explicitly states that the different views can be included in productive debates, and certain views present the past more objectively, or statistically more likely, than others. This view is applicable in an analysis of the current dispute over cultural modernity in three ways; (i) most of the views concerning cultural modernity are based on solid research, and might as such be included in debates over their validity, and (ii) most of these views are true from their own standpoint while (iii) certain interpretations may be closer to the observed archaeological materials.

These points are in line with Thomas S. Kuhn's incommensurability. Incommensurability may be explained as the inability of two elements to be compared because of a lack of common standards (Kuhn 2000:36). Kuhn's work mainly concern natural science, but it is, and for a long time have been, discussed whether archaeology should be classified as a science or not (e.g. Binford 1987; Johnson 2010:35-49). Also, according to Kuhn (1962:159-161), there are no strict rules as to where the term 'science' can be applied. Neither am I the first to apply Kuhn to a humanistic field, Søren Kjørup (2008a:95) argues for an application of Kuhn's theories in humanistic studies.

Kuhn mostly applies incommensurability when discussions exist between paradigms. To explain my use of incommensurability, a definition of paradigms is useful. Thomas Kuhn (1962:10) defines a paradigm as "universally recognized scientific achievements that, for a time, provide model problems and solutions for a community of practitioners". Incommensurability builds upon the idea that one such community of practitioners cannot convince another community of practitioners on their own terms, "each group uses its own paradigm to argue in that paradigms defence" (Kuhn 1962:94). Incommensurability is clear with the example of paradigms, but in the current dispute over South African cultural

modernity, paradigms do not play a significant role. Whether or not the new debates in the late 1990's represented a paradigm shift is of little importance to the current debate (Wurz 2008). However, it is possible to argue that the different discourses, especially seen in the wider context, behaves as paradigms. Note the similarity of the definitions of paradigm and discourse. As such, I argue that incommensurability might occur between discourses. Levels of incommensurability have been argued to exist, and it is also emphasized that incommensurability in archaeology is occasionally caused by the untestability of the explanations applied, as they cannot be proved false (Garofoli and Haidle 2014:20). This means that disagreements between different practice communities are potentially incommensurable on some level, whether or not these belong to different discourses. My task is to explore the possibility that different understandings of cultural modernity, created by practice communities, are the reason for the dispute and might partly lead to incommensurability between discourses.

This builds upon Kuhn's (2000) later work concerning local incommensurability, which "consists in failure to translate between localized clusters of interdefined terms" (Sankey 1993:771). These clusters of interdefined terms will act in the same way as the communities of practitioners mentioned in the definition of paradigm. This means that a researcher defending one view will never be convinced by other views, unless the focus and apparatus of terms is changed. In this specific thesis, it is only possible to belong to one community of practitioners. It is possible to create one such community out of many, but then all communities (practically all but one) must discard at least one of their previous views. As such, incommensurability can work on a very local level between these communities of practitioners as exemplified by Sankey. A paradigm is then not necessary to be able to apply incommensurability. Incommensurability represents a challenge, one founded on other factors than archaeological materials, and I explore whether this is a factor in the current dispute.

On the basis of this, I apply practice community as a working term to analyse the characteristics of the process of interpretation at each case study. Each of my chosen case studies make up one such practice community. I combine Kuhn's later writings on local incommensurability, with his earlier definition of paradigm. The term itself comes from the definition of paradigm. As a community with unified practices, results, interpretation processes and arguments, practice communities provide results and interpretations concerning cultural modernity. These practice communities might belong to the same discourse, if their ways of explaining the world (in this case the emergence of cultural modernity) are unified. They are also *localized clusters of interdefined terms*, which means that they are not automatically

commensurable and not necessarily within one discourse. The case studies analysed are all singular practice communities, but belong to one discourse. The wider context represents certain practice communities from different discourses.

The general presence of e.g. European researchers in African archaeology throughout history and the case of the apartheid regime inhibiting South African research set the scene for the current situation. As I place a specific practice community at each case study, this is on the basis of their different ways of argumentation and interpretation. In certain practice communities there is a distinct research tradition, producing characteristic results. This presence of research traditions have played a part in the construction of these practice communities, but would be problematic to assign clearly to each case study. Several of the practice communities are multinational, and research traditions is a floating term.

Methodology – Discourse Analysis

A discourse is defined as “a certain way to describe and understand the world (or parts of it)” (Jørgensen and Phillips 1999:9, my translation). As such, this thesis is an analysis of several discourses both agreeing and disagreeing, where the different ways to explain cultural modernity (parts of the world) are explored. The case studies examined all belong to the same discourse, but the practice community working at each project is contributing particular contents to the discourse concerning the development of cultural modernity in the southern African MSA. These practice communities encounter practice communities from other discourses in the wider context. As such, discourse analysis is applied both to examine results of different practice communities within one discourse, and the consequences of different discourses presenting opposing arguments. The focus is on current archaeological publications contributing to the dispute over cultural modernity. As each case study is chosen to represent a unique practice community, their interpretation of materials and argumentation for cultural modernity is examined. Discourse analysis is applicable as method, and as this is a rather complicated and varied field, a selection of theories connected to the practice of discourse analysis have been made (Jørgensen and Phillips 1999:12).

I will, following Foucault (1970:30), look toward the outer edges of the discourse. The focus will not be on why certain statements are being proposed as true, but rather on how these truths are produced, and what results they carry with them (Schaanning 1997:13). Neither will the actual possibilities of discerning empirical facts from archaeological materials be examined, but rather how the empirical evidence is presented within different practice

communities. Further, in the words of Espen Schaanning (1997:166-167, my translation), I will “describe how different groups produce theories, models, programmes, examinations, plans or suggestions to describe reality or initiate actions”. The *groups* in my thesis are the practice communities, and they are examined as factors connected to the contribution of contents to cultural modernity.

In practice the different discourses are analysed as a dynamic process. Discourses are constitutive and constituted, which means that a discourse might change social spheres, but are at the same time completely dependent on these (Jørgensen and Phillips 1999:76-86). Certain forms of discourse analysis proposes terms as static in a social web, but during chapter six (*Discussion*) nodal points are applied (Jørgensen and Phillips 1999:37). Nodal points are dynamic and privileged terms that are given meaning through the discourse applying them. These are points that the different discourses in question are trying to define. The terms/nodal points within the debate are then given meaning in relation to the discourse applying them.

An example of one such nodal point is the term ‘symbolism’. This is a term that is given meaning through discourses; in different discourses, it has different meanings. Symbolism might mean artistic expressions, or abstract engravings on ochre that need to be defined through a series of attributes such as being socially shared or imbued with meaning. In a discourse analytical view, the nodal points are not only changing with their discourses, they are completely constituted by them. A term such as ‘symbolism’ is an empty word until given meaning by its surrounding discourse. As the discussion in this thesis is to a high degree focused on terms and arguments, nodal points will help define the discourses, and highlight how different practice communities and discourses assign different features to the contents of cultural modernity. Further, nodal points define disagreements and goes a long way to demonstrate why the archaeological material is discussed; the material concerning (e.g.) symbolism fits a certain model of explanation only within this discourse. It is when these discourses meet that incommensurability potentially ensues, because of a lack of common standards of definition.

The nodal points in themselves resemble some of the features used to define cultural modernity, seen in table 1. These traits are used in the literature to argue for cultural modernity, and met by criticism from the wider context. The nodal points are contracted forms of these traits, which are demonstrated during chapter five (*Analysis of Case Studies*) to dominate the argumentation at the case studies. In chapter five the connection between specific practice communities and these contents of cultural modernity is analysed, and the specific features are

contracted into nodal points. The nodal points are then discussed in relation to the wider context in the subsequent chapter (*Discussion*).

4. Case Studies

In the previous chapter I demonstrated how I intend to examine the contents and understanding of cultural modernity in the southern African MSA, and upon what theoretical ideas I build my argumentation. My sources are the literature published within the current dispute. Current sources from the case studies are important, as the dispute is ongoing. In addition, the sources from the wider context will consist of publications criticizing or supporting the arguments of the case studies, selected to demonstrate the variable contents of cultural modernity.

A selection of archaeological projects contributing to the understanding of cultural modernity is presented in table 3. The table is intended to demonstrate several factors; first and foremost the variety of archaeological materials interpreted towards cultural modernity, secondly the high number of South African projects, supported by projects in Botswana and Namibia. Lastly, it demonstrates the place of the five case studies in relation to a selection of other projects, and their connection to the dispute. The table also demonstrates the amount of literature published on the sites, which was an important factor in the selection of case studies.

The projects used as case studies contain several sites, and certain sites at some of the excavations are more prevalent in the literature. This is not being emphasized here, as I study the practice communities and their contributions to the dispute in question. As such, the literature is in focus, and the same practice community publish literature from all sites on a project. Recent literature is being analysed, as I only examine the current practice community at each project. The current dispute is extensive, and I have chosen five representable case studies to centre the dispute and examine terms and argumentations within the process of interpretation.

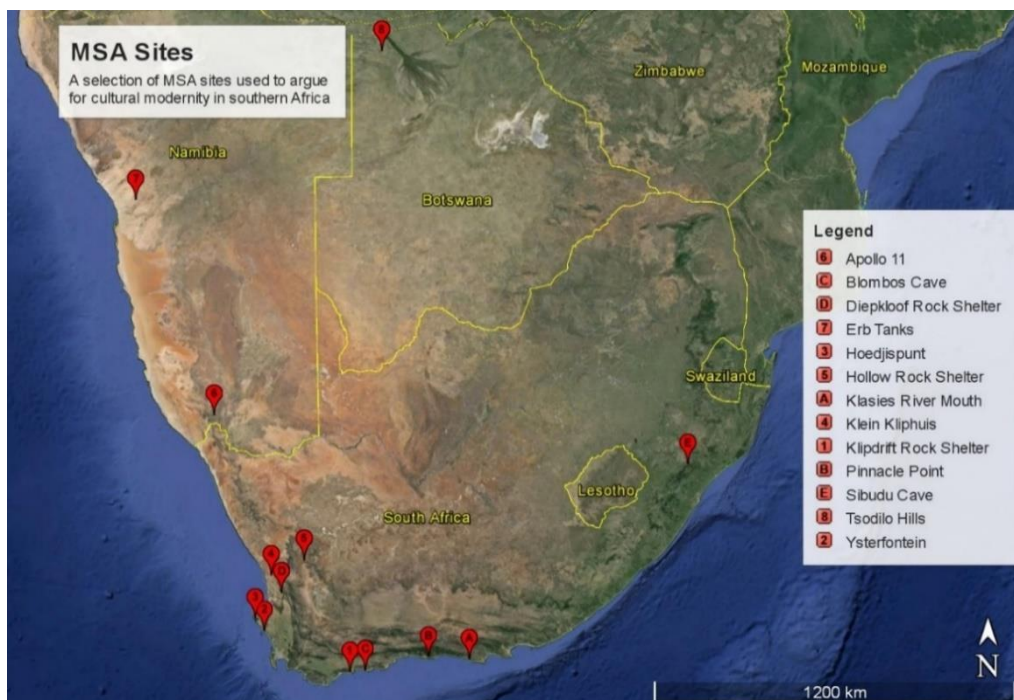
All of the archaeological projects studied have been excavated previously. The oldest excavation is Klasies River Mouth, which have been under excavation in intervals since 1967. These first excavations produced a large quantity of materials, which are difficult to connect to current finds (Singer and Wymer 1982; Villa, et al. 2010:632). However, current excavations led by Sarah Wurz, have produced similar quantities. Klasies River Mouth has been under excavation since the time of apartheid and occupies a big part of South African research history. Similarly, Diepkloof Rockshelter was first excavated in 1973, but then in connection to the LSA. The site turned out to contain a substantial MSA layer, which became the focus of the site. The current excavations have been ongoing since 1999, with a French and South African practice community (Parkington, et al. 2013). Sibudu Cave is a younger project, but has

undergone more than 25 field seasons (Conard, et al. 2012:181). Nicholas J. Conard took over the project in 2011 after Lyn Wadley (Peña and Wadley 2014). A younger project is Blombos Cave, where excavations was initiated in 1992 (C. S. Henshilwood, et al. 2001). Pinnacle Point is the youngest project, with its sites opened in 2000 (Marean, et al. 2010). All the case studies practice similar excavation methods. The sites are dug in 1 m² squares separated in quadrates. Plotting and wet sieving is applied at all sites, with meshes somewhere around 5 mm size, ranging from 10 to 0.5 mm.

All projects applied as case studies are well represented in the literature of the current dispute. The sites are chosen as case studies because of their representative nature; they contribute to the understanding of cultural modernity, as well as representing characteristic finds and argumentations. Their work describe the varied field of the dispute, and demonstrate the varied features of cultural modernity, presented from five sites. The practice communities at the case studies to some degree apply similar interpretation methods, but certain features stand out; Klasies River Mouth, Blombos Cave and Sibudu Cave all partly apply *Chaîne Opératoire*, and Sibudu Cave have also applied attribute analysis (Peña and Wadley 2014:19).

All sites within the MSA of southern Africa contribute to the dispute, and these sites are representative in their thorough nature of excavation, and their agreement on a southern African emergence of cultural modernity in the MSA. Despite variations of explanations and finds at each site, they belong to the same discourse.

Figure 1: A selection of MSA sites used to argue for cultural modernity. Letters A to E represents case studies.



5. Analysis of Case Studies

The current chapter is intended to demonstrate the case studies' contribution to the dispute over cultural modernity. Each case study and its material finds are described, before these materials and their connection to cultural modernity is demonstrated. The current analysis is structured around archaeological materials, which serves to demonstrate this connection. The characteristics of each case study is underlined, and it is demonstrated how the materials and interpretations contribute to cultural modernity within specific practice communities. Certain literary sources may not have been included, but the intention is to demonstrate the materials most commonly linked to cultural modernity and the main arguments applied in this relation. Similarly, not every interpretation of material evidence is analysed here, only those that are central to argue for cultural modernity. This analysis will demonstrate how the case studies have unique views on cultural modernity, but will also lay the foundations for following discussions in the next chapter. Most of the categories being analysed are discussed later, but some are addressed here only to underline the characteristic argumentation within the practice communities.

Blombos Cave, Cape Coast

Introduction – Blombos Cave lies on the southern Cape coast in South Africa some 300 kilometres east of Cape Town. The initial excavations at Blombos Cave took place between 1992 and 1999 (C. S. Henshilwood, et al. 2001:422). These excavations resulted in the retrieval of the now well-known engraved ochre and shell beads, as well as polished bone, bone tools, and lithics (C. S. Henshilwood, et al. 2001). The materials figuring in the dispute over cultural modernity are embedded in the MSA layers of the site. Most of the discussed materials from these layers are dated to the Stillbay (Henshilwood and d'Errico 2011b:82; Henshilwood, et al. 2009:28).

The ochre, shell beads and bone tools have since the early 2000's been widely cited within the dispute over cultural modernity, and their interpretations have been used to argue for the presence of symbolism in the southern African Middle Stone Age. A range of methods have been applied to examine the behaviour embedded in the materials from Blombos Cave, such as cognitive archaeology, microscopic analyses and experimental archaeology. A focus is often to ascertain to what degree the argued symbolism might demonstrate cultural modernity.

Material evidence – The main evidence used to argue for cultural modernity at Blombos Cave is ochre, shell beads and bone tools. In addition the site contains lithic tools and animal remains. The stratigraphic integrity is well accounted for in the layers containing these objects (d'Errico, et al. 2005). Bifacial points are recovered, these tools are *fossiles directeurs* of the Stillbay (e.g. d'Errico, et al. 2005; Henshilwood, et al. 2001; Henshilwood and d'Errico 2011b; Henshilwood, et al. 2009; Vanhaeren, et al. 2013). At Blombos Cave, more than 1500 pieces of ochre, from layers dated to 75 – 100 kya, have been recovered, of which a small number are engraved (Henshilwood and d'Errico 2011b:83; Henshilwood, et al. 2009). These engraved pieces are slabs of ochre dated to the Stillbay (Henshilwood, et al. 2009:28). The engravings are characterized by geometric patterns and intersecting lines. 41 perforated sea snail (*Nassarius kraussianus*) shells were also procured and dated to the Stillbay, at Blombos Cave generally placed between 77 and 70 kya, but sometimes said to be as old as 100 kya (e.g. d'Errico, et al. 2005:8; d'Errico and Henshilwood 2011:52; Henshilwood, et al. 2001). Among other finds discussed at Blombos Cave are close to 30 bone tools, a type of objects previously only found in the European Upper Palaeolithic. These were subject to technological analyses to prove their function as tools resembling the European evidence (Henshilwood, et al. 2001:631). Analyses have also been done of faunal materials, to examine a possible correlation between subsistence strategies and potentially culturally modern lifeways (e.g. Badenhorst, et al. 2014; Thompson 2008; Thompson and Henshilwood 2014). The archaeological materials from Blombos Cave played a significant part in changing the view of symbolism and cultural modernity (Henshilwood, et al. 2001).

Ochre – Henshilwood and colleagues (2009) analysed the ochre to determine the depth of the grooves and the intensity of the production. They conclude that the lines were made by a repetitive motion, demanding energy and dedication, displaying consistent and deliberate engraving techniques. The question of production is explicitly addressed, and the grooves are argued to have been produced with a tool, and not simply by scraping or likewise. In addition, through experimental archaeology the engravings have been compared to post depositional damage, and is concluded to not be the cause of the engravings (Henshilwood, et al. 2009:38). Henshilwood and colleagues (2011) later extended their knowledge about ochre powder production, when what is argued to have been an ochre production toolkit was used to trace production patterns. This knowledge is useful both to learn more about ochre production, and to separate powder production traces from traces of symbol production. These analyses have led to the arguments that several of the engravings are intentional. However, numerous causes

for the engravings are discussed (Henshilwood and d'Errico 2011b; Henshilwood, et al. 2009:42).

Doodling is one such action, argued to be achieved while the mind is occupied elsewhere (Henshilwood and d'Errico 2011b:90; Henshilwood, et al. 2009:42). Such markings would have no intention and carry no socially shared meaning. It is explored whether this is the nature of the Blombos Cave engravings. Doodling is discredited by Henshilwood and d'Errico (2011b:88), who through technical analysis argue that the grooves demand a dedication of energy and the application of a certain tool to be produced. This arguably means that the mind of the engraver must have been occupied with the task at hand, with tools and actions applied to reach a goal. Another possibility is that these pieces of ochre have worked as notational devices, a storage of information. This is argued to not be the case as analyses demonstrate that the lines were made in a single sitting and by the same tool, so that information would not have been added over time. The grooves are also not made as single marks, as in tallying or record keeping, making it unlikely that this was their function (Henshilwood, et al. 2009).

When it is demonstrated that these factors are not causes for the engravings, symbolism stands out as a valid explanation. Henshilwood and colleagues (2009:42) relies on symbols as included in a system of meanings, the symbols being related to each other, and as not having any connection to the feature it depicts apart from being an abstract and socially understood symbol. A notion that the engraving medium would have been bright red when engraved is additionally supportive of the medium as being perceived as symbolic, while not alone demonstrating the existence of a symbolic system (Henshilwood, et al. 2009:43). It is concluded that the engraved artefacts very likely worked within a society mediated by symbolic behaviour (Henshilwood, et al. 2009:45). Although earlier arguments were concentrated on the use and existence of actual symbols at Blombos (Henshilwood, et al. 2002), the argumentation have slightly changed its characteristics over time; it is concluded that symbolism as shared meanings are not necessarily present in all engraved pieces, despite their intentionality (Henshilwood, et al. 2009:40). On the other hand, a tradition is argued to exist at Blombos during the MSA based on recurring types of motifs of varying characteristics over time, proved by their presence in several stratigraphic layers (Henshilwood, et al. 2009:45). This strengthens the arguments of socially shared symbols, as maintenance over time is argued to demand a social system.

Henshilwood and d'Errico (2011b:89) later demonstrated how a range of explanations support the symbolic interpretation at Blombos Cave. Some of these are summed up as continuity in materials and motifs over time, with slight variations in some factors. The

Blombos Cave ochre is clearly problematized, but on the basis of a variety of features it is argued to show potential for carrying meaning and being symbolic (Henshilwood and d'Errico 2011b:92). The core of these arguments are a view of the engravings as abstract depictions, as human capabilities to create non-functional objects. The engravings are argued to be deliberate, and as such represents thoughts extended to physical objects. This extension of the human mind is an important contribution to cultural modernity, and relates to e.g. Lyn Wadley's definition (see chapter 1, *Introduction*), as the ability to store information outside the human brain.

Shell beads – As with the ochre, micro-analysis examinations were applied to examine the characteristics of the perforations in the shells and determine that they were produced by humans. Both through stratigraphic integrity and tests of post-depositional damaging it is determined that the shells were perforated in the MSA (d'Errico, et al. 2005:10-13). Through use-wear analysis and on the basis of similar wear patterns in the perforations the shells are argued to have been strung as beads.

The stringing is at Blombos Cave connected to these beads being applied as personal ornamentation (d'Errico, et al. 2005:15; d'Errico, et al. 2013). Personal ornamentation is argued to be a mediator of symbolism by a number of factors (d'Errico, et al. 2005:4), such as carrying of identities and expressions, and specific meaning as conventional signs (or objects). From this it is suggested that the beads are included in a system of symbolism, observed as variation and continuation in object modification over time (Vanhaeren, et al. 2013).

The analyses of the shell beads demonstrated that the use-wear pattern and size of perforation changes at one point in time, as variation and spread of the beads between two layers makes it less likely that they belong to one depositional occasion (Vanhaeren, et al. 2013:511-515). On the basis that the perforations are argued to be both intentional and symbolic, the change in perforation method is argued to represent a stylistic adaptation (Vanhaeren, et al. 2013:515). Stylistic changes are significant in this relation, and Vanhaeren and colleagues (2013:507, 513-514) emphasize that changes in stylistic norms are not interpreted as utilitarian, but rather built upon socially mediated behaviour, which is a central part of symbols acting within a system. The beads are further interpreted to likely have belonged to multiple individuals within a community both before and after the change in style, thus suggesting that both change and continuation in stringing method was collective (Vanhaeren, et al. 2013:515). As such, the shell beads represents a tradition of perforation that persists over time, while certain characteristics change. The stylistic change is by the author argued to be of importance, similar to stylistic changes in lithic technology etc. Simultaneously,

if the change in style is collective, their meaning is socially shared. These features are needed to argue for the complete symbolism seen in humans (d'Errico and Henshilwood 2011:50). Features of the Blombos Cave shell beads might be compared to factors of symbolism already applied to argue for symbolism in the ochre; the beads are deliberately produced for non-utilitarian purposes, and display a continuity over time.

Bone tools – The bone tools at Blombos Cave are an important feature on the basis of the research history; until the shift in the late 1990's bone tools was a sign of modernity in the European Upper Palaeolithic because of their high concentration and secure dating, opposed to their scattered and unsecurely dated MSA record. However, bone tools were from the early 90's (and earlier, see research history) found in Stillbay and Howiesons Poort layers in South Africa, some bearing traces of hafting. Through technological analysis of bone tools, for example at Blombos Cave, it is possible to note that the production sequences resemble those of ethnological sources and later pre-history, both being societies demonstrating cultural modernity. Much of the importance of these tools lies in this supportive role for cultural modernity in the Middle Stone Age. Few artefacts can unequivocally prove cultural modernity, but an accumulation of objects displaying stratigraphic integrity is useful for new interpretations (Henshilwood, et al. 2001:634-637).

Bone tools represents more than only this shift in materials ascribed as representing cultural modernity. Their production and use is also argued to be connected to cultural modernity (d'Errico and Henshilwood 2011:52). *Chaîne Opératoire* is applied in the analysis of the bone tools, and all the production stages are examined, from raw material choice and procurement, via tool production and use, to discard (Henshilwood, et al. 2001:642). Bone tools are present in both the LSA and MSA layers, but the stratigraphic integrity is demonstrated here as in other instances; chemical analysis, morphology and stratigraphy are among the factors used to separate the LSA and MSA bone tools, to safely assume that the MSA bone tools are not actually LSA tools from a mixed layer. The disputed role of bone tools is addressed (Henshilwood, et al. 2001:666), but it is concluded that bone tools represent an advanced technology that arguably fit into a symbolic behavioural pattern, together with other advanced but utilitarian tools at Blombos Cave. There are examples of engraved bone at the site, but these do not display as advanced patterns as on the ochre. They are, however, connected to the same type of arguments as the ochre, while not being interpreted as necessarily symbolic (Henshilwood, et al. 2001:661).

A selection of the bone tools from Blombos are interpreted as arrow points, which have been extensively polished (Henshilwood, et al. 2001:662-663). This polishing have no utilitarian function, and the possibilities of the arrow points as being part of a symbolic system is explored. At this point ethnographic parallels are drawn, to exemplify this possibility and the potential connection to social roles (Henshilwood, et al. 2001). These arguments are further strengthened by the fact that what is interpreted as potentially separate object types, such as arrow points and awls, display different grades of polishing, potentially tied to arrow points containing more meaning or having a different social role than the awls. They might for example display an “*added value*” (Henshilwood and Dubreuil 2011:373). Language is mentioned in connection to this, and it is proposed that if these styles and social roles are apparent, it is very likely that these ideas are spread through language. This evidence puts bone points in a situation where they support the symbolic arguments. Henshilwood et al. (2001:668) is more than aware of the fact that bone tools representing cultural modernity depends on the model applied, but on several fronts they support symbolism; they are no longer exclusive to the Upper Palaeolithic, they display advanced technology, they have potential to display style and social signalling, and might be tied to language.

As is visible, Blombos Cave is tightly connected to symbolism, or symbolic behaviour (d'Errico, et al. 2005). Symbolism is an important part of cultural modernity at Blombos Cave because of the connection to advanced behavioural patterns. It is argued that the symbolism demonstrated through the Blombos Cave material is representative of cultural modernity by displaying producers with a sense of self, expressive behaviour and identities, among other factors. It is argued that the materials represent an understanding of these factors, that the symbols are created and imbued with meaning understood by other individuals.

Diepkloof Rock Shelter, Western Cape

Introduction – Diepkloof Rock Shelter is located in the Western Cape Province, South Africa, 180 kilometres northwest of Cape Town. The site was initially excavated in 1973 (Parkington, et al. 2013), then again in 1986 (Parkington and Poggenpoel 1987), before the current series of excavations began in the late 1990's (Parkington, et al. 2013:3369-3370; Porraz, et al. 2013). Diepkloof Rock Shelter contains a complete stratigraphic sequence, from 130 to 45 kya. This sequence spans the pre-Stillbay, Stillbay, Howiesons Poort and post-Howiesons Poort (Miller, et al. 2013:3432). The stratigraphic integrity of the materials being discussed is preserved, and

the layers are proved to contain traces of both human and animal activity. In addition the organic remains are extensive (Parkington, et al. 2013:3371-3373). Diepkloof Rock Shelter occupies a central place in the dispute due to its engraved ostrich eggshell from a Howiesons Poort layer. These are fragmented ostrich eggshells, with certain pieces containing engravings or traces of perforations. Ethnographic sources and technological analyses are applied in the analysis of the objects (Texier, et al. 2010; Texier, et al. 2013).

Material evidence – 270 fragments of engraved ostrich eggshells have been recovered (Texier, et al. 2010; Texier, et al. 2013). Ostrich eggshells without engravings are found throughout the entire sequence, ranging from pre-Stillbay to Post-Howiesons Poort (Texier, et al. 2010:6180). However, only in the Howiesons Poort are the engraved ostrich eggshell found, dated to approximately 60 kya. The engraved ostrich eggshell are because of post-depositional damage only found as fragments, but several pieces have been refitted (Texier, et al. 2010:6182). The engravings are mapped, to demonstrate the process of engraving and their general patterns. Examinations of the engraved ostrich eggshell demonstrate that the grooves cut barely into the intermediate layer, and indicate that colouration visible on certain of the ostrich eggshell was unintentional and occurred after both the deposition and the fragmentation, as effects of fire (Texier, et al. 2010:6183). It has been estimated by the amount of engraved ostrich eggshell that a total of 25 containers is a likely number. Three pieces have been pierced, of which one contains engravings, out of a total of 408 pieces of engraved ostrich eggshell (Texier, et al. 2010).

Lithics have also been procured from the layers at Diepkloof Rock Shelter. These lithics are included in arguments that challenge the conventional dates of the Stillbay and Howiesons Poort (Porráz, et al. 2013; Parkington, et al. 2013; Porráz, et al. 2008). These results were reached through analysis of the lithics and sedimentation. In addition, over a hundred pieces of ochre are procured at the site. These pieces of ochre do not carry any form of abstract depictions or engravings, and the analyses of these have been focused on their mineralogical and technical details, to put them in context within the MSA (Laure Dayet, et al. 2013:90; L. Dayet, et al. 2013:3494). The ochre pieces contain natural markings, or use-wear traces not linked to symbolism (L. Dayet, et al. 2013:3499).

Engraved ostrich eggshells – Texier and colleagues (Texier, et al. 2010; Texier, et al. 2013) have made a series of interpretations of the engraved ostrich eggshells. The main interpretations have been towards these engravings as abstract patterns with symbolic value, which is rarely

contested and is comparable to a range of proposed abstract depictions imbued with symbols on some level (e.g. d'Errico, et al. 2012; Henshilwood, et al. 2009; Mackay and Welz 2008). These abstract depictions are connected to symbolism in much of the same way as at Blombos Cave; they rely on a social system of signalling identities and group markers.

The engravings are also traced to be of standardized geometric shapes, within a set of variations (Texier, et al. 2010:6180). This is interpreted as some sort of tradition of engravings, possibly displaying social or individual variety. The motifs signifies, according to Porraz and colleagues (2013), a standardized and traditional social signalling system. It is argued that the engravings are a “set of rules readable by all participants” (Porraz, et al. 2013:3545). The interpretation of a tradition is based on small pieces of engraved ostrich eggshell (sometimes refitted) from a range of layers, said to most likely represent engravings from whole eggs (Texier, et al. 2010). There are also certain standard motifs identified, which exists over a longer time and are varied enough to demonstrate a tradition evolving over time, according to Texier and colleagues (2010; 2013:3419-3428). A tradition is here important to the interpretation that people had the ability to communicate style or meaning within standard engravings, and are also argued to demonstrate shared group mentalities (Texier, et al. 2010:6183). The notion of an engraving tradition might be compared to the application of tradition as a term at Blombos Cave (Henshilwood, et al. 2009).

The social world of the MSA is interpreted on the basis of these engraved ostrich eggshell. engraved ostrich eggshell is argued to have been mediating a set of social rules, increasing with inter-group contact (Porraz, et al. 2013:3546-3550; Porraz, et al. 2013; Texier, et al. 2013). These arguments are built upon the notion that symbolic behaviour is an intragroup response to inter-group pressure, and lithic raw-material data shows an extended economic and social territory. From this it is suggested that regional and culturally distinct groups existed in Southern Africa approximately 100 kya, maintaining socio-economic networks of raw-material procurement. The practice community at Diepkloof Rock Shelter claims that Howiesons Poort emerged as a result of extended social networks (Porraz, et al. 2013:3550). These networks are added to the symbolic value of the engraved ostrich eggshell as included in socio-economic territories, indicating inter-group contact and social identities.

Perforated ostrich eggshell – Certain of the arguments concerning the perforated ostrich eggshell are already mentioned under the previous section about the engraved ostrich eggshell, such as the symbolism in the engravings. Some interpretations, however, are singular to the perforated pieces. Ethnographic parallels and comparisons to eggshell containers from the LSA

are two methods that are applied to determine that the perforated eggshell fragments are parts of containers (Texier, et al. 2010; Texier, et al. 2013). This is similar to the argumentation concerning the bone tool analyses at Blombos Cave; eggshell containers from ethnographic sources and the Late Stone Age are both embedded in a culturally modern social system, and the containers from the MSA are then put in the same context. Eggshell containers are no longer only found in LSA records. Texier and colleagues (2013:3429) address the challenges surrounding the status of the containers, such as if the MSA population engraved the eggshells as containers, or if the engravings were done prior the eggshells becoming containers, and argue that the containers represent a behavioural adaptation to an arid environment. The emergence of containers cannot be archaeologically connected to a change in environment, but may be linked to mobility strategies; water containers can be stored at convenient locations, and they allow for interpretations towards advanced planning and environmental awareness. Perforations of eggshells are only observed in the layers where engravings occur, it is as such stated by Texier and Colleagues (2010:6183) that it is likely that most of the engraved pieces represent containers, and further that containers played some role in a social network. This is mainly an extension of the arguments surrounding the engravings, but the containers are linked to a social system of utilitarian objects. Water containers have been useful objects, transferred in a social group. As such they were perfect for e.g. identification markings (Texier, et al. 2010:6183).

Lithics – The discussions surrounding lithics at Diepkloof Rock Shelter are mainly connected to the validity of the Howiesons Poort and Stillbay as defined and technologically isolated techno-complexes (Porráz, et al. 2008). Porráz and colleagues (2013) Relies on datings by Jacobs and colleagues (2008) from several Stillbay and Howiesons Poort sites. However, the dating of the Stillbay at Diepkloof Rock Shelter, is argued to actually belong to a Howiesons Poort layer (Porráz, et al. 2013:3386, 3395). This is based on the deep Howiesons Poort and Stillbay layers at the site, and the fact that both the Stillbay and the Howiesons Poort is represented in the same archaeological sequence. Several explanations are offered for this early emergence of the Howiesons Poort, about 70 kya, such as a long duration in South Africa or at Diepkloof Rock Shelter in specific, or the co-existence of several techno-complexes (Porráz, et al. 2013:3549). As such, the correct definition of this layer is of importance to the interpretation of the site, as it strengthens the arguments concerning continuity and change, and help demonstrate why care should be taken when applying Howiesons Poort and Stillbay. In the same manner it has been demonstrated through lithic studies that there is a variety within

the Stillbay and Howiesons Poort, making it difficult to ascribe certain behaviours to each of the techno-complexes. The lithics are not simply seen as static parts of a defined techno-complex. During these analyses a behavioural change is proposed to potentially be seen in one specific layer, representing a sudden and intentional change (Porráz, et al. 2008).

In addition the chronology is tested, and the transition from Stillbay to Howiesons Poort is arguably more complicated than earlier thought, as well as demonstrating a possible pre-Howiesons Poort assemblage (Porráz, et al. 2008). Analyses of the lithics were done to separate three different economic zones of procured lithics at Diepkloof Rock Shelter; a local, semi-local, and exotic sector, all connected to long distance movement and potentially inter-group contact (Porráz, et al. 2008:109-110). This might be compared to the earlier points of social networks (Porráz, et al. 2008). This is of importance because it is argued that there is a coexistence of multiple technologies at Diepkloof Rock Shelter, and that this is connected to the creation of social identities. Porráz et al. (2013:3550) ends by stating that the dispersal of the Howiesons Poort was a “dispersal of ideas, rather than people”. These ideas are as such dispersed and maintained in social systems, and an understanding of symbols and identities is inferred. The lithic analyses thus represent new views on technology, which are applied in, and combined with, the interpretations of the social factors.

To sum up, Texier and colleagues argue for a standardized system of symbolism, containing both collective and individual engravings of varied design. Texier et al. (2010) suggest group identification and individual expressions as reasons for the engravings. These interpretations are seen in more of the materials, as change and dynamics in a social system is in focus at Diepkloof Rock Shelter. These arguments, including those surrounding the engraved ostrich eggshell represents interpretations of the engravings possibly being connected to traditions and a change in behaviour. Porráz and colleagues (2013:3545-3546) proposes that MSA people changed during the (late part of the) Howiesons Poort, this change is compared to sites such as Blombos Cave. Populations now produced red ochre powder, used glue to haft tools, and communicated with symbols. In addition they collected raw-materials from distant sources, and as such maintained Diepkloof Rock Shelter in a territorial socio-economic network. The main contribution to cultural modernity at the site is the inter- and intrasocial behaviour traced in the objects. Symbolism, behavioural adaptation and change, maintaining of traditions etc. are all applied to argue for these advanced social behaviours. This is a central feature of cultural modernity as trade networks and group identities are an important feature of modern populations, and the creation of objects and depictions imbued with these social ties are a

unique human feature. Maintaining such signals, both between and inside groups, in changing environments, seen in a tradition of engraved ostrich eggshell through different time periods, is argued to be a clear sign of adaptation (Porráz, et al. 2013:3545). Traditions are maintained in abstract objects through these adaptations, demonstrating the importance of these social identities.

Klasies River Mouth, Eastern Cape Coast

Introduction – Klasies River Mouth is located along the Tsitsikama Coast, on the Eastern Cape of South Africa, some 84 kilometres east of Port Elizabeth. Klasies River Mouth excavations were initiated in 1967 – 1968 and continued from 1984 (Pyne 2014:191). The site contains some of the oldest known evidence for cultural modernity, argued to be present as early as 115 kya (Wurz 2008:153). Klasies River Mouth has been a point of reference concerning the Stillbay and Howiesons Poort, due to its characteristic river mouth stratigraphy with a 20 meter well dated stratigraphic sequence (Deacon and Geleijnse 1988). The stratigraphy is suited to chronologically describe changes occurring within the MSA (McCall 2006:430). As of 2010 one of the research goals was to examine the Thermoluminescence dates of Klasies, dating the beginning of the Howiesons Poort to 90 kya, with the Stillbay as old as 128 kya (Villa, et al. 2010:632).

The currently published analyses are mostly on lithic technology. The study of core and blade technology is a part of the contribution to defining the Stillbay and Howiesons Poort dates. Klasies River Mouth was at the centre of the shift in the late 1990's with a material focus on cultural modernity, and questions concerning the behaviour embedded in lithic tools. Ever since the first articles concerning technology as mediator of modernity, active style and language have been proposed to be present at Klasies River Mouth (Wurz 1999). A general goal at Klasies River Mouth is describing the technological variability within the Howiesons Poort. During earlier research Klasies River Mouth was interpreted to represent the common views of the MSA as displaying what was at the time described as primitive culture compared to the LSA, on account of lacking fishing behaviour, symbols etc (Singer and Wymer 1982; Wurz 2008:151). Today Klasies River Mouth is used as evidence of technological complexity through a Howiesons Poort assemblage, and marine resource procurement in the Middle Stone Age was documented as early as the 1960's (Jerardino and Marean 2010:412; Singer and Wymer 1982:155-186).

Material evidence – The Klasies River Mouth practice community has a clear focus on lithic technology. The archaeological materials have been gathered over the course of earlier and current excavations. Combining the materials from the first and last excavations in a unified analysis is said to be impossible due to differences in practice and storage, but assemblages are compared to make the record as complete as possible (Villa, et al. 2010:632). The methods include comparative studies to put Klasies River Mouth in relation to other MSA sites both in technological and behavioural terms. These analyses rely to some degree on the *chaîne opératoire*, as previously described, and in other instances the examinations are quantitative in character (McCall 2006:431). As is usual at MSA sites, ochre is procured from the archaeological record, which originate from the Singer and Wymer excavations from 1967-8, but have not been examined earlier. The ochre have been examined by d’Errico and colleagues (2012) in relation to abstract engravings. Despite potentially being engraved, the cognitive implications of this piece is not said to necessarily have implications for cultural modernity.

Klasies River Mouth contains lithics from a range of stratigraphic layers (Singer and Wymer 1982). At the end of the 1990’s the lithics from the Howieson Poort levels of Klasies River Mouth was in focus, more precisely the crescents, or backed artefacts (Wurz 1999). These stone tools are *fossiles directeurs* of the Howiesons Poort and were found in all the earlier series of excavations, but were never applied as evidence for cultural modernity. As such, they are an example of the new views on cultural modernity as they became central to evidence in the argument for cultural modernity at Klasies River Mouth (1999:46).

Lithics – The material record is argued to display flexible and innovative material procedures in the MSA, adjusted to people’s subsistence needs as well as connected to “a symbolic web that structured the choices that they made” (Wurz 2008:154), as well as a notion of traditions of tool production, and transferred knowledge from generation to generation. Through *chaîne opératoire* and experimental archaeology Wurz (1999:46) argued for planning and multitasking as well as consciousness extended to objects and actions not presently at hand. A central argument for cultural modernity at Klasies River Mouth is that an artefact need not be imbued with symbolism by its makers for it to demonstrate symbolic behaviour (Wurz 2008:152). This is seen in the interpretation of utilitarian objects that are argued to demonstrate social signalling, style and language.

Style in the stone tools is at the same time argued to be as standardized in the Klasies River Mouth lithics as in LSA tools (Wurz 2008:152). This stylistic standardisation is argued to be mediated through social rules and communications. This is based on a dichotomy known

as isocrestic or passive style (Sacket 1990), and active style (Sackett 1977). Passive style carries no meaning, and is not based in a social system. Active style, on the other hand, is socially constituted, and demonstrates a goal oriented style not necessarily utilitarian. Wurz (1999:46) argues that the style seen in the backed segments is active, and proposes the possibility of these demonstrating capabilities of language. The arguments of the lithics are further elaborated in later sources, when there is a change in style despite unchanging raw materials. This is connected to social changes, and active conventionalized thinking (Wurz 2008:153). In addition, the lithics at Klasies River Mouth resembles Levallois technique, while simultaneously displaying differences (Singer and Wymer 1982:46; Wurz 2002:1004). This is a technique of stone tool production where every step within the production is consciously planned; each step lays the foundation for the next, and such production is discussed to partly be symbolic behaviour in stone tool production (Villa, et al. 2010:651)

Further analyses suggest that the backed pieces typical of the Howiesons Poort were hafted, which have earlier been used to argue for the use of bow and arrows at Klasies River Mouth (Singer and Wymer 1982:209). However, it has been underlined that no analyses, such as use-wear, can act as unequivocal evidence for such behaviour (Villa, et al. 2010:638). Since the late 90's the entire process behind the production of backed segments has been analysed (Wurz 1999). These crescent stone tools are a defining feature of the Howiesons Poort and demonstrate the change occurring at the end of the 1990's, as the behaviour embedded in these were analysed as mediators of cultural modernity (Wurz 1999). These are all technological views that have made the site important in the dispute over cultural modernity, and most of the analyses have contributed to examine the cultural modernity behind the utilitarian objects of Klasies River Mouth.

One of the interpretations that is discussed at Klasies River Mouth is that the assumed degradation of technology appearing after the Howiesons Poort is not reflected in the archaeological materials at the site (McCall 2006; Wurz 2008:154). A change in technology is visible, but this might reflect a social change, climate changes, or a choice or necessity to return to earlier technology. The notion that an apparent dismissal of technology as a sign of culturally non-modern populations is often contested (Conard, et al. 2012; Lombard and Parsons 2011). Based on comparisons to other sites and *chaîne opératoires*, it is argued that

“the operational sequences remain the same and suggests that the change in the manner of percussion is not due to a degrading of cultural transmission and copying errors but is an adaptive shift in functional requirements” (Villa, et al. 2010:646).

These points can be related to Sibudu Cave, where the same type of research questions are asked. A range of models are offered to explain this change, such as environmental stress (McCall 2007; Villa, et al. 2010), or population decrease (Jacobs, et al. 2008; Powell, et al. 2009).

The technological factors at Klasies River Mouth are not all said to demonstrate cultural modernity, as the Howiesons Poort materials at the site might only represent this in certain instances (Wurz 2008:154). Explanations for the features of the lithics vary, and other researchers rely on the impact of a climatic change to explain the change of technology, and argue for a social change towards procurement of scarce materials and a changed resource focus (McCall 2006). Such points are not restricted to rely on environmental explanations; as mentioned several researchers maintain their view of a population decrease, which might be used to explain the same factors. As such it is visible why describing the Howiesons Poort at Klasies River Mouth is a focus. A demonstration of the character of continuation or change will impact the interpretation; the existence of actively standardized backed tools, or processing of bone and ochre, are signs of cultural modernity. A static lithic technology on the other hand, is not (Wadley 2007; Wurz 2008:153). This demonstrates the challenges of tracing cultural modernity in artefacts, and Wurz (2008) requests the application of more holistic models, of analyses concerning the totality of the material record. Klasies River Mouth is as such contributing by making cultural modernity potentially visible in utilitarian materials, and applying its own cases to problematize the research. Wurz (2008:154) argues for the potential of symbolic and modern behaviour to occur much earlier than the time in question. She simultaneously argues for new views and the discard of old theories and explanations for cultural modernity, an intensification in theoretical development to increase the interpretative value of objects used to demonstrate cultural modernity.

Organic material – Among the organic materials at Klasies River Mouth are some of the oldest anatomically modern human remains, representing the anatomically modern human populations living at Klasies River Mouth in the Middle Stone Age (Singer and Wymer 1982:147-149). Among the human remains analysed are teeth. Human teeth vary in morphology, but compared to modern populations in South Africa the teeth from the MSA are within or on the limit of modern variations. On this basis it has been argued that the populations in question were anatomically modern (Rightmire and Deacon 2001:542-543). The behaviour is then further analysed to argue for the cultural modernity of these populations through the

analysis of other organic materials, in this case animal bones, to examine the hunting patterns of these populations. Through experimental archaeology and comparisons with animal remains from both hunting/butchering and scavenging, as well as a stone point embedded in animal remains, Richard G. Milo (1998:126) argues that the people at Klasies River Mouth hunted prey, and potentially formed social task groups to organize hunting. These arguments demonstrate the potential of cultural modernity in hunting patterns, and is a fitting example for how the MSA hunting is no longer necessarily seen as inferior to LSA hunting.

Singer and Wymer (1982:115-116) wrote about certain pieces of potentially worked bone recovered during 1967-1968, among thousands of bone pieces. At the time they were used to suggest a bone industry present in MSA II and Howieson Poort levels. The recovered bone was suggested to have been worked by humans, or even to have been used as tools. The worked bone were not suggested to imply cultural modernity in 1982, but have later been used together with other evidence from Klasies River Mouth and other sites to argue for the presence of cultural modernity in the southern African MSA (e.g. Backwell, et al. 2008; Henshilwood, et al. 2001; Henshilwood and d'Errico 2011b; Wurz 2008). The bone tools at Klasies River Mouth enters the debate on equal premises to the Blombos Cave bone tools; while not as abundant as other artefact groups, they suggest the presence of bone tool industries in the MSA, and as such narrows the gap between the MSA and the Upper Palaeolithic. The behaviour embedded in the production of such tools are not studied as extensively as at Blombos Cave, but is cited as a sign of cultural modernity (Wurz 2008:154).

As demonstrated, the material focus at Klasies River Mouth highlights several issues. First and foremost the potential for tracing cultural modernity in utilitarian objects. There are central arguments that social systems, containing dispersal of ideas and knowledge, can be traced in the advanced technological behaviour seen at Klasies River Mouth. This represents an extension of the arguments towards technology, and makes cultural modernity statistically more likely as it is arguably displayed in a range of different materials. On the other hand, Klasies River Mouth is a good example to demonstrate the polarity of the debate, as the behaviour embedded in the stone tools are disputed, as will be addressed. Klasies River Mouth also demonstrate how hunting patterns and technology can be examined to argue for an older presence of certain sets of behaviour demonstrated in the LSA and interpreted as cultural modernity in the anatomically modern human populations that lived at the site.

Pinnacle Point, Eastern Cape Coast

Introduction – Pinnacle Point is located at Mossel Bay, on the Southern Tip of South Africa, approximately 400 kilometres east of Cape Town. The first excavations at Pinnacle Point were initiated in 2000 (Marean 2010:427).

The stratigraphy at Pinnacle Point is displaying several geographically separated occupations over several sites, in addition to intervals of occupations, with no likely connection to each other (Marean 2010:427). The oldest series of occupations are dated to between 164 – 90 kya, before the site was unoccupied until 40 kya due to a collapse of the cave mouth which the sites are located within. After this the cave was again occupied at intervals (Marean 2010:427). Early dates for features of cultural modernity have been determined at Pinnacle Point. Human use of plant resources, tool modification, collecting of shellfish and use of pigment at the site is interpreted in relation to cultural modernity and is at Pinnacle Point dated to as far back as 162/164 kya (Albert and Marean 2012; Marean, et al. 2010). The MSA is well documented at the site and both natural and cultural remains are abundant. The practice community at Pinnacle Point wish to demonstrate how MSA populations used their landscape (Marean 2010:437).

Material evidence – Pinnacle Point has a variation of materials connected to cultural modernity. The site represents the oldest evidence of human use of marine resources, as an abundant record of invertebrate shellfish species is present (Jerardino and Marean 2010:412). These pieces of evidence are combined with measurements of sea level and proximity to the coast in the MSA, to explore the behaviours of the populations and their use of the sea as a resource. Other faunal remains, such as small and large mammals, are examined to explore food gathering/hunting patterns (Marean 2010). Burned faunal and floral remains are present, and connected to subsistence patterns and knowledge about heat-treating. There is a strong focus on environment and changing climates in several of the arguments.

Evidence from Pinnacle Point indicate an early practice of heat treating of lithic materials, analysed to investigate MSA peoples' abilities to alter material characteristics. Ochre have also been recovered, and the use of this as pigments is discussed, as well as the archaeologically observed conscious selection of ochre with certain features (Watts 2010). Certain challenges are acknowledged at Pinnacle Point, such as small populations being virtually invisible, or pigment as an uncertain evidence group (Marean 2010:429; Watts 2010:393).

Marine fauna – Human populations at Pinnacle Point included sea food in their diet by at least 164 kya. This early date for sea food procurement is linked to climatic conditions (Jerardino and Marean 2010). The time in question, 191 – 71 kya, was a harsh climatic period, and sea food procurement is connected to interpretations of adaptations towards new sources of food. A high degree of sea food procurement in the Late Stone Age and the comparably low degree and variable characteristics in the Middle Stone Age made such subsistence patterns easily associated with culturally modern populations. Both lower population density and inferior cognitive abilities have been used as explanations for the sea food gathering patterns in the MSA (Jerardino and Marean 2010:413). The Pinnacle Point practice community, among others, work to prove the opposite; an early and highly intense use and knowledge of sea resources (Albert and Marean 2012; Bar-Matthews, et al. 2010; Jerardino and Marean 2010; Marean 2010; Thompson 2008). Seafood represents adaptation, a behaviour pattern well suited to argue for cultural modernity. The behaviour is traced through analysing the sea levels and the intensity of shell fish gathering. The shell fish density was higher when the coastline was within 10 kilometres. This is argued by Marean (2010:432) to coincide with the daily traveling distance of hunter gatherer populations in archaeological sources and ethnographic parallels. As such it is argued that coast proximity was a key factor in the occupations (Jerardino and Marean 2010:417). With a more distant coastline, the occupation is less intense.

Gathering of marine shells is at Pinnacle Point linked to cultural modernity through the mental operations demanded to be able to effectively collect shells (Jerardino and Marean 2010:413). Collection of shells in ethnographic sources is argued to display knowledge of locations, tidal forces and wave action. In addition, to gather larger quantities cooperation is necessary, and transport must be accounted for both in time, energy output and physical storage of the shells (Jerardino and Marean 2010:422). In addition, gathering of non-dietary shells are interpreted in the record, as certain types of shell were most likely empty when gathered and brought back to the site. These shells are argued to have had some value beyond nutrition, for example as objects of beauty, exemplified by types of especially striking shells (Jerardino and Marean 2010:421).

One argument by Curtis Marean (2010:435) poses that the collection of one certain mussel, the *Donax serra*, might represent a behavioural change. The *Donax serra* is found in sandy beaches, except when migrating, and is present in several layers. This mussel is not found at Pinnacle Point in earlier layers, even when sandy beaches were within gathering range. Some MSA layers at Pinnacle Point (and other sites) contain concentrations of *Donax serra* large enough to investigate the exploitation of these mussels. The number of *Donax serra* increases

through the MSA, and eventually their numbers would have necessitated fairly stable shorelines and concentrated gathering patterns. Simply gathering the mussels visible during migration would not create the same quantity. It is thus argued that the increase in number of these mussels represents a changing in the understanding of the gathering of *Donnax serra*. As such, the intensity and characteristics of sea food procurement is used by Marean (2010:441) to argue for the presence of cultural modernity at Pinnacle Point (Jerardino and Marean 2010:422).

The clear significance of shoreline distance to the site and the intensity of occupation, as well as the marine fauna, is interpreted as an indication that the people at Pinnacle Point in the MSA had a well developed and highly dependent connection to the sea (Marean 2010:441). When adding the presence of shells potentially gathered because of their non-nutricient value, it is further argued that the sea and the ecofacts from it might have been embedded in both a symbolic and social system (Jerardino and Marean 2010:421).

Terrestrial fauna – Pinnacle Point stands out in its low number of tortoise, small mammal and sea mammal remains, usually abundant features at MSA sites (Thompson 2010:336). Neither are carnivore remains very abundant, indicating that humans were most likely the main cause for the large number of mammal remains, such as springbok and Wildebeest (Marean 2010:434; Thompson 2010:336). The active hunting of bigger prey is examined to decrease the gap between LSA and MSA food procurement techniques, as active big prey hunting have by some been thought to be a feature of the LSA and later, and a feature of cultural modernity (Klein 1979; Klein 1988).

Further, the terrestrial fauna is widely applied to reconstruct paleoenvironments and ecology (Rector and Reed 2010:340-341). Carnivore remains and dwellings are analysed to explore the total variation of prey in close proximity, as carnivores display less selective hunting patterns than humans. Thus, by comparing assemblages with animal hunting patterns, it is possible to discern human hunting patterns. Such analyses are at Pinnacle Point used to argue for an ecological mosaic. Hunting behaviour in such an environment is a telling sign of human use of the ecology, and selective processes are applicable as factors of varied and responsive behaviour (Rector and Reed 2010:355).

Floral remains – Phytoliths are analysed to interpret MSA peoples use of plant resources. Phytoliths are plant components, consisting of silica, that persist through time. Much like pollen they can be used to determine vegetation. These remains are at Pinnacle Point connected

to the gathering and use of plants as resources, and demonstrate a variability of floral resources used by MSA peoples, within the variability of the Cape Floral Kingdom (Albert and Marean 2012:381). The Cape Floral Kingdom went through several ecological and climatic changes, as seen in the phytolith material, which is argued to result in a varied, and arguably adaptive, behaviour in human populations in the area (Bar-Matthews, et al. 2010:2143). Such behaviour is argued to be part of the traits that define cultural modernity. These arguments are reached through a combination of floral analysis and histories of cave characteristics.

Some of the faunal materials of varying types have been intentionally burned, demonstrated through analyses of the characteristics of these materials and their proximity to hearths (Albert and Marean 2012:365). Burned floral materials have most likely been used as fuel, and fuel in hearths tend to be a constant and reliable source of energy, such as wood. At Pinnacle Point, however, the fuel seems to vary, and often consists of fuel that burns quick and hot, such as smaller plants. This is interpreted as a possibility of MSA people adapting to the lack of trees in the periods discussed (Albert and Marean 2012).

Lithics – The lithics are mainly produced in silcrete. At Pinnacle Point the occasional heat treating of stone resources go as far back as 164 kya, and is argued to be a mediator of cultural modernity (Brown, et al. 2009). Heating of silcrete makes the stone more predictable when knapped, and the flaking of the raw material is more controllable. The action of heating raw material requires a certain mental awareness of heat, the property of the stone, and the changing of characteristics linked to the heating. The fact that no such behaviour is observable in European Neanderthals during the Middle Palaeolithic is used to propose that the ability to understand the process of heating raw materials to alter their production characteristics was a behavioural advantage (Brown, et al. 2009:861).

Regular heat-treating of tools emerge at the same time as a significant change in climate, dated to the beginning of the Stillbay, approximately 72 kya. At this point in time, humans in the area shifted their lithic raw materials from quartzite to heat treated silcrete (Bar-Matthews, et al. 2010:2142-2143). They are argued to have adapted their technology to new materials and new production processes. The heating is argued to be a feature of cultural modernity, but also the change in raw material is argued to represent a rapid behavioural response to climatic change. This represents an awareness of the environment, and an adaptational behaviour. Adaptations and continual innovations is an opposition to the technological monotony often taken as a sign of archaic behaviour (Bar-Matthews, et al. 2010:2142-2143).

Through analysis of the lithics' edge damage it is concluded that the points discarded at Pinnacle Point have been used as cutting tools (Schoville 2010:390; Uomini 2009). This is based on the traces of use on the tools, demonstrating a consistent, more intensive use of the left side and dorsal face (outside). The preference of one edge is further interpreted to be behavioural, and the possibility of this being dependent on handedness is proposed. Traces of use in the tools fit right-handed individuals, and handedness is a feature that may tentatively be linked to cultural modernity through biological evolution of the human brain.

MSA peoples understanding of and adaptation to the environment are central arguments for cultural modernity at Pinnacle Point. When the shoreline is located a longer distance from the cave, the lithic core reductions are high, sea food procurement is low, and the evidence for cultural modernity is non-existent. Pinnacle Point proves a higher intensity of occupation during times of close shore proximity. This, together with analyses of general environment and climatic changes arguably indicate that the people at Pinnacle Point utilized their environment and had utilitarian knowledge about both sea and land resources, as well as heat treatment of materials and resources. The switch to a technique building upon heating is also argued to be a response to climatic changes. The main argument towards cultural modernity at Pinnacle Point is that humans in the MSA adapted and utilized their environment in responses to climatic changes. They also adopted new resources and techniques.

Sibudu Cave, Eastern Cape Coast

Introduction – Sibudu Cave is located 40 kilometres north of Durban, and approximately 15 kilometres from the coast of the Indian Ocean. Sibudu Cave was initially excavated during the 1980's, and have been excavated over more than 25 field seasons (Conard, et al. 2012:181). In 2011 the project changed field leaders, but the practice community remains, having added new ideas and practices to the already established research tradition at the site. Sibudu Cave has a long occupational sequence, and spans the pre-Stillbay, Stillbay, Howiesons Poort, post-Howiesons Poort, and late and final MSA (Wadley and Jacobs 2006). In addition, layers from the Iron Age are present. Some instances of disturbance are present, but the layers investigated to argue for cultural modernity are not affected by this (Conard, et al. 2012:181). The practice community at Sibudu Cave is currently focusing on the post-Howiesons Poort assemblage, and is arguing for a continuation in advanced technological behaviour in place of the more

conservative views of a technological devolution after the Howiesons Poort. (Backwell, et al. 2008; Conard, et al. 2012; Wadley 2010).

Material evidence – The main material being discussed at Sibudu Cave are lithics from a rich assemblage spanning several time periods, with varying characteristics (Conard, et al. 2012; Peña and Wadley 2014; Villa, et al. 2005). The lithics at Sibudu Cave have been used to argue for a continuation of technological advances and standardizations after the Howiesons Poort (Conard, et al. 2012). Lithic raw materials at Sibudu are all thought to be of local origins (Peña and Wadley 2014:14). The lithics are included in debates concerning the hafting of tools, and the implications of such behaviour.

A bone tool industry is also argued to have been present at Sibudu Cave, dated to the Howiesons Poort. A small number of bone tools are recovered (Backwell, et al. 2008). These bone tools are argued to have been used for the working of hides etc. in the MSA, through comparisons to similar tools and their uses in MSA, LSA, Iron Age and ethnographic sources. Certain of the bone tools are argued to have potentially been arrow points, which is argued to be a significant technological advance and a feature of cultural modernity (Backwell, et al. 2008).

Animal remains have been analysed at the site in relation to mortality profiles, species and their habitats, and movement patterns. This is to explore MSA people's general patterns of subsistence, and understanding of the environment. The possibility of snares and traps being used at Sibudu in the MSA is addressed, but not taken up for discussion here, as these implements are not argued to actually have been present (Wadley 2010).

Lithics – Nicholas J. Conard and colleagues (2012) argues that the contents of the Stillbay and Howiesons Poort techno complexes have been clearly defined, and those tools that do not belong to these complexes, either in time or morphology, are defined by not being characteristic of the Stillbay or Howiesons Poort. Researchers use Sibudu Cave to argue for a defined 'Sibudan' techno-complex following the Howiesons Poort, instead of applying the widely used term post-Howiesons Poort (Conard, et al. 2012:182). The challenges connected to this are said to be that there are seemingly a low degree of standardizations in the post-Howiesons Poort, opposed to the Stillbay and Howiesons Poort. The only tool types repeated in the post-Howiesons Poort are scrapers and unifacial points, which are highly variable in their characteristics. The assemblage discussed here is the post-Howiesons Poort assemblage, named Sibudan by the authors.

At Sibudu Cave it is expected that the producers of post-Howiesons Poort tools were conscious agents, with knowledge and skills to predict the behaviour of the raw material. As such, the stages from raw material procurement to tool production are expected to be connected, and it is argued that production of post-Howiesons Poort tools at Sibudu Cave was not random, as earlier believed (Conard, et al. 2012:182). A high variability in reduction strategies in the Sibudan assemblage is observed; some cores are displaying a technique close to Levallois while others have Howiesons Poort characteristics, some tools are made from flakes of widely different characteristics etc. Rather than randomness, this is argued to indicate that the producers were interested in the morphology of the finished product, rather than the knapping technique (Conard, et al. 2012:184-185). Several tool types are defined as standardized groups to support this argument, such as Thongati and Ndwedwe tools, among others (Conard, et al. 2012:184-196). These tools are simultaneously argued to demonstrate deliberate and continuous use, and the Thongati tools are for example repeatedly reduced through retouch over time, or recycled to create smaller tools.

The variation seen at Sibudu Cave is argued to represent highly structured tool production sequences, a behavioural pattern displaying cultural modernity (Conard, et al. 2012:197). The variation is linked to a sophisticated knowledge about stone tool production, and abilities to modify and recycle tools as needed. The tools of the Sibudan are further argued to be as characteristic as those of the Stillbay or Howiesons Poort, and the behaviour embedded in them is said to not be inferior to that of these previous techno-complexes (Conard, et al. 2012:197). The lithics also demonstrates continuation in the occupation of Sibudu Cave, which is used to argue for a cultural florescence instead of a devolution. The notion that Stillbay and Howiesons Poort are outstanding periods characterized by innovations is refuted, and continuation of innovations and adaptations in lithic technology is argued to be the case.

The lithics at Sibudu varies in material, but quartz tools have been specifically analysed. Certain of these from a Howiesons Poort layer seem to have certain different production characteristics, perhaps representing adaptation in the production (Peña and Wadley 2014:22). Bipolar knapping technique is evident in the quartz assemblage, which is highly associated with the LSA. This technique is then argued to demonstrate the equal production abilities as those present in the LSA (Peña and Wadley 2014:19). Further arguments pose that the use of quartz or bipolar knapping techniques in the MSA does not represent cultural modernity, as this is not constant and highly variable, but rather demonstrates a variability of behaviour in the MSA. This arguably refutes the thought of the MSA as being a linear evolutionary path

(Villa, et al. 2005:419), and rather demonstrates the technology of the period to be varied and dependent on social, utilitarian and symbolic needs (Peña and Wadley 2014:22).

Bone tools – The Sibudu Cave bone tools are compared to bone tools from Blombos Cave, Peers Cave, and Klasies River Mouth (Backwell, et al. 2008:1566-1567). One bone point at Sibudu Cave is speculated to have been an arrow point (Wadley 2010:187). This is based on the fact that the point lacks the size and robustness of spear points observed both archaeologically and ethnographically. The bone point have been directly compared to those of ethnographic parallels designed to be used without poison on smaller animals. No evidence of poison exists at Sibudu, which would most likely be needed to hunt large prey. These factors, combined with high frequencies of small mammals, makes it relevant to suggest a hunting pattern of smaller mammals for the bow and arrow during the Howiesons Poort (Backwell, et al. 2008:1576). No direct evidence for bow and arrow in the MSA exists, and most of the arguments at Sibudu Cave are applied to argue for the potential use of this technology during the Howiesons Poort. Backwell (2008:1577) and colleagues suggest that the bow and arrow were invented in the MSA, while the application of poison is an LSA feature. As the evidence for these weapons are not direct, their actual role in cultural modernity is not discussed, but nevertheless represents central views of variability in the MSA.

On the basis of bone points from Sibudu Cave and other MSA sites, Lucinda Backwell and colleagues (2008:1576) suggest that MSA people could have made more bone tools if necessary, as the cognitive demands for such types of technology are clearly present. The reasons for the lack of bone tools at Sibudu Cave and other sites might be attributed to a range of factors, but the authors underline questions concerning the role of bone tools in prehistoric societies. Arguments have been made towards them possibly being part of the development towards more complex propulsion technology (Backwell, et al. 2008:1576-1577). The bone tools do, however, present more definite evidence of being representatives of a non-linear development, not favouring classic views of evolution (Backwell, et al. 2008:1577). When the development emerges, and then disappears in the post-Howiesons Poort at Sibudu Cave, it is argued that this represents changes in subsistence in relations to climatic or environmental factors proved to have been present in the area (Backwell, et al. 2008:1577).

Mastic – Wadley (2007:685; 2011:101-102) mentions the recovering of backed pieces bearing traces of hafting at a variety of sites including Sibudu Cave. These traces are residues of plant or gum resin, often mixed with ochre or other substances. Wadley and colleagues (Wadley, et

al. 2009) analysed the process of hafting and preparing of resin to argue for advanced cognitive abilities. The production of this mastic differs from e.g. compound adhesives created by birds or wasps in varying features and the number of operational sequences involved, and may as such be separated in the archaeological record. The mixing of ochre in plant or gum resin is necessary to avoid the tip falling off when thrust at an animal, as the ochre makes the dry resin more flexible and prevents it from shattering at impact. The process from producing this glue to hafting stone points on a shaft requires pyro-technology, some knowledge of the mineral of ochre, and about the results of mixing with other substances and subsequent heating. The producer would also need to control the temperature of the fire, and keep in mind the earlier work done on the materials that are to be hafted. This is multitasking, and represents knowledge about several materials and actions (Wadley 2012). Wadley (2011:106-107) argues that the points of e.g. spears also need to be rotated in the correct way during hafting to function in a hunt, and this rotation represents an abstract knowledge of the future function of the point. Mental rotation is argued to display an advanced abstract capacity, which is connected to cultural modernity. Last, but not least, this action contains so many different forms of knowledge that it is likely that it was transferred through language. These cognitive abilities are argued to potentially coexist with symbolic capacities. As such, symbolism is studied without necessarily separating the MSA material objects from their initial meaning (Wadley 2011).

Sibudu Cave offers new solutions to the question of technological devolution after the disappearance of the Howiesons Poort complex. Lithics are analysed to argue for a characteristic, defined, and standardized post-Howiesons Poort technology at Sibudu Cave, demonstrating that the devolution in technology and lithic production is not unequivocally proven. Through the analyses, the practice communities offers new views on lithic tools, as standardized end products with varied production sequences, and they question the role of these techno complexes. They also prove a continuation of adaptive and responsive behaviour. Interpretations on the potential of significant technological advances, such as the mental demands for the use of bow and arrow or hafted tools are also discussed.

Summary of Analysis

This analysis of five case studies have demonstrated how five separate archaeological practice communities are contributing to the dispute over cultural modernity. The Blombos Cave

practice community argues for the presence of symbolism during the MSA, with a population that distributed ideas and meanings socially through symbolic mediators. The Diepkloof Rock Shelter practice community is similar, but argue that the population at Diepkloof Rock Shelter had intra-social structures that were mediated through symbolic objects, and were determined by inter-social relations. At both Blombos Cave and Diepkloof Rock Shelter it is argued that the symbolic objects are part of a tradition, maintained over time. The main difference at the two projects are the focus of the argumentation, the Blombos Cave practice community argue for symbolism, while the Diepkloof Rock Shelter materials are argued to demonstrate advanced social behaviour.

The Klasies River Mouth argumentation is somewhat different, and the technological focus is used to argue for the more advanced cognitive abilities seen in the production of lithic tools, such as language and transfer of knowledge. As such, Klasies River Mouth is argued to demonstrate advanced technological behaviour. In a similar way, Pinnacle Point is linked to knowledge, but here about the environment. Knowledge of the shore and resource management is argued for on the basis of varied occupation intensity dependent on the distance to the shore line. Responsive food procurement and adaptation to the environment is an important factor at Pinnacle Point, and as such the project is a mediator of advanced subsistence behaviour. Sibudu Cave occupies a somewhat different place in the dispute, demonstrating the continuation of advanced technological innovations, as well as the potential of food gathering advances that require social and environmental awareness.

This analysis have answered the first of two questions within the line of inquiry; *“How are specific practice communities connected to different contents of cultural modernity?”* It has been demonstrated how these specific practice communities argue for specific contents of the suite of behaviours that make up cultural modernity through characteristic material interpretations. These contents will now be discussed in relation to their function as nodal points, and to their changing implications for cultural modernity.

6. Discussion

In the previous chapter, five case studies were analysed to show how specific practice communities are connected to different contents of cultural modernity. Each case study presented a range of characteristic traits used in the dispute over cultural modernity, which all form central arguments for this suite of behaviours at the case studies. These traits were contracted into nodal points (see table 4), which are argued to represent cultural modernity by the practice community presenting them. In this chapter, I seek to demonstrate how the contents of cultural modernity are understood in a wider context, and the consequences of nodal points being defined differently by researchers, discourses, or practice communities from the wider context. It is explored whether different definitions and interpretations of the traits within the nodal points lead to different interpretations of cultural modernity. General problems in the different arguments are addressed, and the potential of incommensurability is at times assessed.

Table 4. Outline of nodal points connected to cultural modernity at specific case studies. The nodal points are contracted terms of widely cited features of cultural modernity.

Nodal point	Encompassing features within cultural modernity	Case Study
Symbolic Behaviour	Abstract patterns/objects, personal ornamentation, external information storage, social systems	Blombos Cave
Advanced Social Behaviour	Social identities, organization and exchange;	Diepkloof Rock Shelter
Advanced Technological Behaviour	advanced and deliberate production sequences, technological communication	Klasies River Mouth, Sibudu Cave
Advanced Subsistence Behaviour	Marine subsistence adaptation, terrestrial subsistence adaptation	Pinnacle Point, Sibudu Cave

Symbolic Behaviour

Abstract patterns/objects – The patterns in the ochre from Blombos Cave are argued to have been part of social systems, with meanings dispersed through a mental dimension and even potentially forming early types of religion (e.g. Henshilwood 2009:44-45; Henshilwood and d'Errico 2011b; Henshilwood, et al. 2009; Henshilwood and Dubreuil 2011; Henshilwood and Marean 2003; Vanhaeren, et al. 2013). The shell beads recovered at Blombos Cave are interpreted as symbolic in the form of personal adornment. The beads and ochre, and the behaviour related to them, are featured heavily in the dispute concerning cultural modernity in

the southern African MSA. Wynn and Coolidge (2009, 2010, 2011), having their areas of expertise in Anthropology and Psychology, have produced opposing views of the beads and ochre representing cultural modernity through the application of models from psychology and cognitive archaeology. They have created, in their own words, a ‘strict standard’ for applying cognitive archaeology in the interpretation of archaeological materials, a set of demands that must be fulfilled for cognitive archaeology to be applied (Wynn and Coolidge 2011). Wynn and Coolidge (2009:119) propose that the application of cognitive archaeology demands that (i) the archaeological material must display the cognitive abilities that is proposed, the simplest cognitive function embedded in the material must be favoured, and (ii) “the archaeological evidence must be [...] reliably identified and placed appropriately in time and space”. These requirements are especially fitting for the Blombos Cave material, much because cognitive evolution have been applied in the interpretation of the finds (d’Errico, et al. 2013; Henshilwood and d’Errico 2011b; Henshilwood, et al. 2009; Hodgson 2014; Vanhaeren, et al. 2013).

The source of the discussion concerning the symbolic interpretations of the Blombos Cave materials is that “if the archaeological traces could have been generated by simpler actions, or simpler cognition, then the simpler explanation must be favoured” (Wynn and Coolidge 2009:119), which is a central point in Wynn and Coolidge’s strict standard. As demonstrated, the Blombos Cave practice community have argued thoroughly for their views, partly by the application of cognitive archaeology (e.g. Henshilwood, et al. 2009; Vanhaeren, et al. 2013:515). Both the ochre engravings and bead perforations have been demonstrated to be intentionally made and have no subsistence use, which is widely accepted also by critics (Klein 2013:3; Wynn and Coolidge 2011). Further, these objects are argued to be symbols representing stored and socially constituted information. This is where the discussion is centered.

Wynn and Coolidge (2011) apply a psychological phenomenon called working memory to argue against the Blombos Cave materials being fully symbolic. Working memory describes the ability to keep current task related information ready in mind, despite interferences. According to the authors, a gradual development of working memory capacities beyond the levels of primates is present from the times of *Homo erectus*. The working memory capacity in humans is generally high, but may vary individually (Wynn and Coolidge 2011:4). No animals except humans demonstrate what have been named *enhanced working memory* (Wynn and Coolidge 2011:4). A possible solution to tracing the emergence of symbolic behaviour would be to trace this enhanced working memory in the archaeological record. Behaviours that

require enhanced working memory arguably demonstrates the full suite of behaviours present in cultural modernity.

Wynn and Coolidge (2011:5) emphasizes challenges with identifying working memory, among them the challenge of methodology. Mainly, there is a limited archaeological record by which to examine prehistoric populations' working memory capacities, as technology is the most accessible archaeological feature, which according to the authors does not necessarily require enhanced working memory. This leads to the necessity of analysing items that are arguably symbolic. This demands the application of e.g. evolutionary psychology, hence the methods from Blombos Cave and criticism from Wynn and Coolidge. There appears to be a lack of consensus in evolutionary psychology and an uncertainty in the chains of development that led to cultural modernity, which leads both the Blombos Cave practice community and Wynn and Coolidge to apply working explanations from cognitive archaeology. In addition, Wynn and Coolidge (2011:3) points out that archaeologists generally have too little knowledge about cognitive archaeology, and terms such as “abstract” or “complex” are too shallow to have any real interpretative value.

The disagreements from Wynn and Coolidge exemplifies how different practice communities interpret archaeological evidence, and the implications for cultural modernity. Through cognitive archaeology the Blombos Cave practice community argues for cultural modernity, and through the same discipline Wynn and Coolidge argues for the opposite. They argue that the behaviour interpreted by the Blombos Cave practice community as existing in the ochre and beads from the MSA, is not actually observable. This is through their strict standard and the general problems of working memory (Coolidge and Wynn 2011; Wynn and Coolidge 2009, 2011).

Derek Hodgson (2014) has presented further criticism towards the Blombos Cave and Diepkloof Rock Shelter interpretations. Hodgson (2014:60) argues that the Blombos Cave engravings are too small and ambiguous to communicate social information, and that the small size “discount[s] group affiliation or an emblematic explanation”. That objects need to be highly visible to represent group affiliation is a factor that Hodgson is alone in using; neither the advocates for MSA symbolism, nor their counterparts, discuss size as an impacting factor. If the object is loaded with a meaning, this meaning may be transferred independent of size. I support this on a lack of literature stating the opposite, as well as several unequivocally symbolic objects of small size that are procured from the Upper Palaeolithic, such as Venus figurines, beads, flint blades deposited as grave goods, or *batons de commandement* (e.g. d'Errico 2009:110, figure 8.3). These might be interpreted to represent group affiliation or

emblematic explanations, and are definitely included in cultural modernity. If the MSA people were able to consciously imbue objects with group affiliations or status, small size could be overcome by simple forms of communication. The Blombos Cave practice community argues specifically that the objects are parts of a system of socially shared meanings, which implicitly means that this system can overcome the small size of objects. Size could matter when creating and sharing a sign carrying a meaning not already established, but as emphasized by Hodgson (2014:59), this is not on its own interpreted to represent cultural modernity and not argued to be the case at Blombos Cave. Hodgson (2014:60) simultaneously argue that if socio-cultural factors have impacted the engravings, they would be different between cultures, yet, he states, there are similar examples from Sibudu Cave and Klasies River Mouth. When looked into, this argument is invalid, as the examples referred to are both wrongly cited; d'Errico and colleagues (2008) never discuss incised ochre at Sibudu Cave, and d'Errico (2012) explicitly states the probability of the ochre at Klasies River Mouth to be of a different character than at Blombos Cave.

Personal ornamentation – According to their standards of applying cognitive archaeology, Wynn and Coolidge (2011:9) argue that e.g. the beads do not represent full cultural modernity, but have the potential of representing tallying devices or other storage of information. The beads arguably represent information stored for a limited time only, which is argued to not necessarily represent cultural modernity. Other critics are pointing out equal complications in the Blombos argumentation regarding the personal ornamentation, based on different psychological models (e.g. Garofoli 2014; Savage-Rumbaugh and Fields 2011). Problems arise when it is demonstrated that if researchers were to agree that the beads represented personal ornamentation, contrary to Wynn and Coolidge, this would not mean that researchers would agree in the presence of cultural modernity. Duilio Garofoli (2014) argues that personal ornamentation is not necessarily a mediator of shared social dimensions, while shared social dimensions is often a specific argument for personal ornaments as symbolic (d'Errico, et al. 2005; Henshilwood and Dubreuil 2011:379-380; Vanhaeren, et al. 2013). Garofoli (2014), on the other hand, argues that personal adornments are not necessarily full symbols, and that there is no need to share any mental dimension to wear them. He relies on the definition of a full symbol as having no connection to the object it symbolizes through physical likeness or causal law. Beads are valuable items, and Garofoli further argues that wearing them will send a statement that the wearer is able to produce such items, and the wearer is perceived differently as a result of the beads being conceived as valuable. As such, it is argued that beads are not full

symbols, as there is a connection between their value and the extension of the person wearing them. I take this to mean that in comparison, a full symbol could be the Christian cross; a wooden cross has little to no actual value, and has no physical likeness to anything it symbolises. Still, Christians share beliefs, a mental dimension that gives the cross a high value and connects it to a suite of beliefs, associations, and explanations (as used in e.g. Coolidge and Wynn 2011). This demonstrates the consequences of differing definitions of symbols, as one definition leads to cultural modernity containing socially shared mentalities, while another leads to nothing more than a relationship between valuable items and a wish to acquire such items. Despite the agreement of shell beads as personal adornments, their cognitive implications are explained by different models, based on different standards of definition. This particular debate is as such not addressing the use of the beads, but rather the implications of them actually being worn as personal adornments. A central factor here is that an agreement in the archaeological material does not lead to an interpretative agreement, and it is demonstrated that a different view on symbols, their features and definitions, leads to a different interpretation of the behaviour embedded in personal ornaments.

The reasons for the interpretation of e.g. beads as symbolic are more than just non-utilitarian behaviour; interpretations also rely on parallels to other periods. Beads are apparent in a variety of time periods and areas, including the European Upper Palaeolithic and even earlier in northern Africa (d'Errico, et al. 2005; Vanhaeren, et al. 2013). The presence in the MSA of objects resembling claimed symbolic artefacts from other periods and areas might then be used to ask why the MSA beads should not be symbolic. Klein (2009:747) addresses this factor and argues that the beads from Blombos Cave are not as elaborate as their LSA counterparts as they have for example not been shaped by humans, simply perforated. This is a rare qualitative argument, and when the Blombos Cave practice community or their critics applies cognitive archaeology they do not state a level of material complexity that would be acknowledged as modern. Relevant here, is the fact that Klein bases this argument on very different standards, visual complexity, than the Blombos Cave practice community who relies on the psychological implications in creating and maintaining personal ornaments as a category.

Klein (2013) further argues that symbolism is first visible 50 – 60 kya, during the time when anatomically modern humans left Africa. He emphasizes a change in brain organization that allowed for a shift in human behaviour towards cultural modernity. This change, he states, was a mutation of already existing brain functions in early anatomically modern humans who exhibited a limited set of features of cultural modernity, as arguably visible in the

archaeological record. Admittedly, Klein states, neurological arguments are difficult to apply, as human remains is the only physical source. However, the Neanderthal genome and the newly discovered Denisovans display a continual genetic development in humans around 60 kya. On this basis, Klein further argues that a genetic development was most likely also present in *Homo sapiens* at the time. He states that models explaining out of Africa solely by demographic or social factors are expecting no relevant genetic change during this time. This is an important aspect, as Klein represents a rarely seen view, today.

External information storage – External information storage is a human ability, a modern way of storing information for later use. The beads from Blombos Cave are objects argued to represent a storage of social information, hence the symbolic interpretation (Henshilwood 2005; Vanhaeren, et al. 2013). Wynn and Coolidge (2009) are applying the features within their ‘strict standard’ to argue against the Blombos Cave beads to have been adornments carrying social meaning, and rather arguing that they represent a different form of external information storage. They are argued to have been tallying devices used to keep track of information (Coolidge and Wynn 2011; Wynn and Coolidge 2011:8-9). External storage of information surrounds us in the societies of today, but is still argued to not alone be a sign of cultural modernity. The external information storage (potentially) present at Blombos Cave demonstrates a capacity to see an object as a token of information within a limited time frame, and according to Wynn and Coolidge (2011:9) full cultural modernity or a capacity for enhanced working memory is not demonstrated. Wynn and Coolidge does not wholly refute the idea of MSA cultural modernity, but underlines the case of ambiguous evidence during the time in question, as a behaviour demanding enhanced working memory is not the only possible interpretation if the archaeological record does not fulfil their strict standard for the application of cognitive archaeology. It is very typical that the interpretative discussions are moving away from the archaeological materials, towards the nature of the behaviour that is interpreted, both interpretations argue for information storage, but only one argue for symbolism. The beads and engravings are not as heavily discussed as the implications of them being symbolic. It is also typical that the behaviour embedded in the objects change characteristics as the psychological model of explanation is changed.

Social systems – The Blombos Cave practice community have included research from other disciplines in their argumentation for symbols. William C. McGrew (2011) outlined some views on MSA symbols from a primatologists standpoint in the first chapter of *Homo*

Symbolicus (Henshilwood and d'Errico 2011a). McGrew (2011:1-3) points out that the great apes are the closest relatives of living humans, and share significant behavioural patterns. However, they do not display an understanding of full symbolism, and might be proxies to explore what type of behaviour is uniquely human. Following this, one can examine if some of this uniquely human behaviour is recognizable in the archaeological record. McGrew further demonstrates how several examples of communicative behaviour observed in primates might complicate the interpretation of symbols in the archaeological record. He argues that language and communication does not equal speech, as several types of apes use body language to communicate sexual arousal, social status etc. He also points out vocal communications by apes and monkeys, how they adapt their screams in relation to the presence of dominant males/females, presence of danger etc. The biggest challenge for archaeologists when interpreting symbolism becomes clear when McGrew emphasizes behaviour in apes that may be interpreted as social sharing of symbols, or even ethnic markers; group specific hand-holding patterns during social grooming, capuchin monkeys using tools (albeit not advanced), or certain examples of apes storing objects for later use. All of these factors would resemble features of cultural modernity in the archaeological record, but when observed in other animals than humans they are observably belonging to less advanced behavioural patterns.

These facts are not explicitly applied as criticism towards the Blombos Cave materials, but they do implicitly problematize many of the arguments made by the Blombos Cave practice community. Firstly, apes are now often seen to be capable of behaviour earlier thought to be uniquely human. Secondly, several features are argued by McGrew to not be reliant on each other; that communication does not equal language, and that symbol-use does not equal language are two arguments posed by McGrew that have implications for the Blombos Cave interpretation, as the Blombos Cave Materials might from this standpoint represent communication, but not cultural modernity. Summed up, such studies are central to change the view of cultural modernity. If these explanations are applied, then one feature of cultural modernity such as symbol-use does not necessarily mean socially shared meanings.

Challenges surrounding such views can be exemplified by Wynn and Coolidge's argument of the beads being tallying devices. The Blombos Cave beads are not comparable to the non-symbolic (and to some degree unknown) tallying abilities of primates as they represent a behaviour more advanced than that observed in ape communities (Biro and Matsuzawa 2001; Jordan, et al. 2008; Rumbaugh, et al. 1987). Despite the abilities of apes to grasp the concept of summarization, numerical symbols, and quantities, they have never been observed to store information for later or extended use. Thus, tallying devices would be representatives of more

advanced behaviour than observed in apes. However, at the same time, Wynn and Coolidge emphasize that the beads represent information potentially stored for only a limited time, and as such not representing fully enhanced working memory. This highlights another challenge; demonstrating a type of behaviour more advanced than the behaviour observed in primates, does not mean that the behaviour represents cultural modernity. This again means that measuring the degree of complexity or symbolism one would need to demonstrate in the archaeological record to prove cultural modernity would be difficult. In relation to this one should remember that Wynn and Coolidge maintains that the behaviour observed at Blombos Cave is more advanced than apes or *Homo erectus*, but not culturally modern. Finding single features that define cultural modernity that separates a full suite of behaviours from apes or *Homo erectus* is problematic, as “the modern mind is not [...] simply an archaic mind augmented by symbolism and language” (Wynn and Coolidge 2011:2).

Advanced Social Behaviour

Social identities, organization and exchange – Based on the existence of engraved ostrich eggshells at Diepkloof Rock Shelter, and the argued presence of lithics produced in distant raw materials, the population at Diepkloof Rock Shelter is argued to have been part of social networks that responded to social pressure. Derek Hodgson (2014) proposes further criticism to the interpretation of the Blombos Cave and Diepkloof Rock Shelter material. The most central point from Hodgson (2014:65) is:

“that a ‘higher order’ symbolic explanation based on a socio-cultural tradition should not be invoked with respect to the Blombos and Diepkloof engravings when a ‘lower order’ account based on specific perceptual mechanisms of the visual brain is sufficient”.

In other words, one should apply the explanation that contains less guesswork. This may be combined with the general criticism from Wynn and Coolidge, which is both older and very much similar. From this it is possible to discern that the Diepkloof Rock Shelter engraved ostrich eggshell is not securely lodged within a socio-economic identity interpretation (Hodgson 2014:61). The Diepkloof Rock Shelter material does not visibly imply that more than one cultural group existed and communicated. The interpretations of social identities etc. at Diepkloof Rock Shelter are based on the existence and implications of symbolic objects, culturally modern symbolism is taken for granted when at other sites symbolism is still very

much being debated. In the comments to Henshilwood and Dubreuil (2011:380), Wynn and Coolidge comments on the phenomenon of group affiliations, but then related to the beads at Blombos Cave; they argue that the beads might represent indexes, worn as a group and resembling imitation, but without explicit or implicit meaning. This would not represent cultural modernity, and while they *could* have been worn as mobile symbolic tokens of e.g. status, such an explanation is not necessary to explain the existence of the beads (see the strict standard). As such, it is visible how a selection of researchers from the wider context choose to problematize the symbolic argumentation as not strong enough. As demonstrated in the previous part of this chapter, there is little consensus in the discussion about symbolism. The most common is to argue that shared group mentalities may indicate symbolism (d'Errico and Henshilwood 2011:50; Wurz 2008:153). On the other hand, at Diepkloof Rock Shelter the symbolic interpretations open up for interpretations of shared group mentalities in social systems including group affiliations. As such, it is clear that arguing for social networks, pressure, and group affiliations is problematic, as these factors build on heavily discussed features.

It is argued that the perforated ostrich eggshells at Diepkloof Rock Shelter demonstrates the use of engraved ostrich eggshells as containers (Texier, et al. 2010:6183). Ethnographic parallels are applied to argue that the perforated pieces had a function as containers that were included in the social networks. The three perforated pieces are then linked to their stratigraphically related engraved, but not perforated, counterparts to argue for a tradition of engraving containers (Texier, et al. 2010:6183-6184). The social system that included the engraved ostrich eggshell is argued to display intra-social organization, and mediating of rules and social behaviour. This is based on lithic raw materials from distant sources, and both social and geographical networks of material procurement. Such arguments can be compared to other works demonstrating distant raw material acquisition, to demonstrate how similar archaeological results lead to different interpretations. Lithic materials from Tsodilo Hills, Botswana, have been refitted and analysed, and the materials are determined to be of non-local origins (Nash, et al. 2013). In addition, tools have been brought to the site and left, never to be used. This material is argued to exhibit ritual behaviour, and as such cultural modernity (Coulson, et al. 2011; Staurset 2014:201-204).

This comparison is intended to show that an extensive refit analysis have been accomplished by the Tsodilo Hills practice community to argue for the use of non-local raw materials. These interpretations have different social and cultural implications than the social interpretations from Diepkloof Rock Shelter. A ritual explanation for a material assemblage

does not require interpretations of all the factors argued to be present at Diepkloof Rock Shelter (for the applied definition of ritual, see Coulson, et al. 2011:47). The ritual explanation requires the display of certain features, all arguably present in the material. Arguing for intra social organization, social pressure, and identities normally requires more material evidence than seen at Diepkloof Rock Shelter, demonstrated by for example the general lack of such interpretations from the southern African MSA. The Diepkloof Rock Shelter practice community argues for behaviour on a societal level, features not observable in the archaeological record. The lithic assemblage admittedly contains tools of local materials (Miller, et al. 2013:3437, table 2), but by optical observations of grain size, stone characteristics and comparisons to similar outcrops it is argued that a number of the lithics have distant origins (Porraz, et al. 2008). At for example Tsodilo Hills geological fingerprinting have been applied, and the exact locations of the lithics have been empirically demonstrated. This means that in the archaeological record it is a secure observation that the lithics have been brought to the site, and this behaviour is matched to one definition of ritual (Coulson, et al. 2011).

The differences are then, that at Diepkloof Rock Shelter the interpretation that the lithics are brought from distant sources is comparably not as scientifically solid as at Tsodilo Hills. Furthermore, social networks and social pressure is not directly observable in the archaeological record, and not necessary to explain it. Distant origins and discarded tools are directly observable at Tsodilo Hills. Diepkloof Rock Shelter interpretations are further from the archaeological materials than the interpretations from Tsodilo Hills, it is a fact that lithics must have been brought to Tsodilo Hills for some reason. If one were to disagree with the Tsodilo Hills interpretations the debate would be archaeological; either there would be uncertainties in the methods, or the interpretations could be said to not match a secure archaeological record. In addition, the distant raw materials at Tsodilo Hills should be explained, and the practice community at the site proposes one such explanation. At Diepkloof Rock Shelter, the presence of symbolism (not directly observable) is said to lay the foundation for social identities and group affiliations, while symbolism in other sources (e.g. Blombos Cave) is discussed at its foundations. As mentioned, Hodgson explicitly criticises the Diepkloof Rock Shelter practice community, but Wynn and Coolidge's strict standard would also oppose these interpretations, as the material interpretations do not represent the simplest cognitive function.

As demonstrated in the analysis, lithics and ochre have been applied to argue for procurement zones, and activity planning possibly linked to extra-social contact (L. Dayet, et al. 2013:3502; Porraz, et al. 2008:109-110). The argument that the symbolic objects at

Diepkloof Rock Shelter was included in a territorial socio-economical network is a singular statement concerning the MSA. A research focus within the MSA is often to argue for symbolism in artefacts and engaging in debates, often with cross-disciplinary methods, over the actual behaviour observed (e.g. d'Errico and Banks 2013; Dubreuil and Henshilwood 2013; Henshilwood and d'Errico 2011a; Hodgson 2014). At Diepkloof Rock Shelter, the symbolism and cultural modernity is implicit, and conclusions, such as the extra-social contact, are drawn on this basis. Interpretations from Vanhaeren and colleagues (2013), resembling those from Diepkloof Rock Shelter, includes the notion of norms in style concerning beads at Blombos, demanding a shared group identity, but as mentioned previously the focus here is on demonstrating these shared group identities as they lay the foundation for possible symbolic behaviour, not the other way around.

An apparent feature when comparing the Diepkloof Rock Shelter interpretations is how for example Henshilwood and d'Errico (2011b:80-82) present these interpretations. These authors generally agree with the Diepkloof Rock Shelter practice community, but a limited set of the interpretations from Diepkloof Rock Shelter are referred to, namely those that imply a communication by practical functionality, communication, stylistic conventions, symbolism etc. (e.g. Henshilwood and d'Errico 2011b:80-82; Henshilwood and Dubreuil 2011:376-378; Shea 2011:20; Wurz 2013). The Diepkloof Rock Shelter practice community have expanded their interpretations towards social identities, organization and extra-social contact, but often these seem to be overlooked, even in the mentioned discussions where they would have been a central argument for cultural modernity in the MSA. This highlights the distinct interpretations at Diepkloof Rock Shelter, as other researchers who agree in an early southern African emergence of cultural modernity choose to refer only to a limited set of the interpretations at Diepkloof Rock Shelter. The site is included in the dispute, but a limited set of arguments are heeded. The materials at Diepkloof Rock Shelter are in the same category as at e.g. Blombos Cave, but the arguments for cultural modernity are not. It is visible how the Diepkloof Rock Shelter practice community bases their interpretations on heavily discussed phenomena.

Advanced Technological Behaviour

Advanced and deliberate production sequences – As demonstrated in the previous chapter, bone tools have been used as proxies of cultural modernity. Much of this discussion can be related to symbolism, and whether worked bone existed in a social and symbolic context.

However, bone tools are present in the Stillbay and Howieson Poort, and are argued to be a technological feature representing cultural modernity (see chapter five). The bone points from the MSA are discussed in relation to ethnographic and LSA parallels, and suggested to have been e.g. spear points. Based on the common presence of bone tools in Upper Palaeolithic records, they have usually been interpreted as a representation of Upper Palaeolithic behaviour observed in the MSA. However, the Sibudu Cave practice community have expressed doubts as to the value of these as representations of cultural modernity, and their role in interpreting behaviour (Backwell, et al. 2008:1567). Arguments for this critical view are based on the belief that bone tools are not abundant in the MSA, only a small number have been recovered, even from Howiesons Poort and Stillbay sites (e.g. Backwell, et al. 2008:1576; Lombard, et al. 2012:136). This suggests that the production of bone tools was a technology that was not maintained throughout the MSA. This is suggested by Backwell and colleagues (2008:1577) to mean that the normal model of technological development, saying that technological innovations accumulate leading up to *Homo sapiens* leaving Africa, is not recognizable in the bone tools. It is argued to rather fit a model where environmental and social factors impacted upon the technology, rather than cognitive development.

As is visible in these interpretations, reaching a consensus for the implications of the presence of bone tools is not a straightforward task. Bone tools changes meaning depending on the interpretations and arguments that are posed from both sides of the debate. Richard Klein is an example of a researcher with a different view on the MSA bone tools. He lists a series of features that enter the archaeological record at the onset of the Upper Palaeolithic, among these are the “first routine shaping of bone, ivory, shell, and related materials into formal artefacts (“points”, “awls”, “needles”, “pins”, etc.)” (Klein 2009:742). This is a significant disagreement in the ongoing dispute, as Klein not only disagrees in bone tools as mediators of cultural modernity, but disregards and ignores the bone tools from several MSA sites. As seen in the analysis, practice communities from for example Blombos Cave, Klasies River Mouth and Sibudu Cave specifically argue for the presence of bone points/tools and needles/awls. Despite Klein citing bone tools as part of the cultural modernity observed in the Upper Palaeolithic, he never addresses the bone tools from the MSA. The main factor of the quote is the routine shaping, and it must be supposed that Klein would argue that no bone tools are routinely made in the MSA. On the contrary, Backwell et al. (2008:1577) argue that the development from Stillbay bone points to the ones recovered from the Howiesons Poort might represent a development towards bow and arrow technology, and Henshilwood and colleagues (2001) have

explicitly argued for a deliberate and formal production of MSA bone tools. This is strictly opposed to Klein's view, but a discussion does not seem to exist.

Advanced production of lithics is a central argument for cultural modernity, and the Stillbay and Howiesons Poort are, as mentioned, often interpreted as innovative periods demonstrating an increase in formalised and deliberate production of lithics, among other artefact categories. In the previous chapter, I demonstrated how the practice community at Sibudu Cave argue for a post-Howiesons Poort technological tradition that is as standardized and formal as is found in the Howiesons Poort. The post-Howiesons Poort at Sibudu Cave, dubbed the Sibudan techno-complex (Conard, et al. 2012), is argued to contain lithics produced with the end product in mind, with the raw material and knapping strategy playing a lesser role. As such, Conard (2008) builds upon his view of the emergence of cultural modernity as a Mosaic Polycentric Modernity model. The Sibudan tools seem less formalized and advanced, but might just as well be applied to argue for cultural modernity in terms of variety. Holistically, arguments for the emergence and disappearance of techno-complexes are varied, and might be posed in favour of climatic factors (e.g. McCall 2007; Villa, et al. 2010) or population decrease (e.g. Jacobs, et al. 2008; Powell, et al. 2009). In addition, several sites that demonstrate continuous habitation after the Howiesons Poort can be listed, which may represent the same type of variability (e.g. Soriano, et al. 2007; Villa, et al. 2010). As such, the variability of technology is argued to mediate cultural modernity.

Conard's (2008, 2010) 'Mosaic, Polycentric Modernity model' supplies an explanation for the material record through variability. He argues that culturally modern features were not universal; these features varied between groups and were then mixed into a mosaic of advantageous features that spread from the Upper Palaeolithic onwards by way of the variable and adaptive behaviour of *Homo sapiens*. Conard (2008:176) emphasizes the central role of Africa in this development, and does not claim that MSA Africans lacked cultural modernity, and rather emphasizes the role of several areas over time to yield the necessary archaeological expression to recognize cultural modernity in the material record.

John J. Shea (2011) have argued specifically for variety as the behaviour that is observable. He argues that cultural modernity can not be observed archaeologically, as it is not quantifiable, as opposed to 'behavioural variability' (Shea criticizes the term 'behavioural modernity', but as underlined, the term is here equal to cultural modernity). In Shea's view, the behaviour of early *Homo sapiens* is by the discourse expected to be uniform, and to follow a certain set of rules to be representable of cultural modernity, which are problematic to observe in the MSA record, hence the dispute. An example is the emergence and disappearance of

innovative techno-complexes such as the Stillbay or Howieson Poort. To argue against the disappearance of techno-complexes to represent a technological devolution, one can argue that the technology existing outside of these complexes is just as representative of cultural modernity, as is being done at Sibudu Cave, or one can argue, as Shea, that the technology observed within the Stillbay and Howieson Poort is representative of a variable behaviour. Humans have not developed linearly, and to expect this will potentially create interpretative incommensurability. Both Conard and Shea exemplify how applying a different explanation for tool production and maintenance can alter the interpretation from technological devolution to adaptive behaviour.

Technological communication – The communicative abilities embedded in technology is often a subject for discussion, as already partly demonstrated. Wurz (2008:154) proposes that culturally modern features are present in stone tools from Klasies River Mouth, and that through the *chaîne opératoire* archaeologists are able to detect these features, such as active style preferences, sharing of ideas and technological knowledge etc. The lithics are in addition argued to display continuity and conventionalized style, in turn demonstrating that ideas and norms are spread through language. The same factors are argued to be observable in the hafting of lithics, and creation of mastic (Wadley 2011). A possible obstacle in this interpretation are the similarities between MSA and Neanderthal technology; they display (i) technological uniformity (not necessarily shared) during a long period of time (Lombard, et al. 2012; Wynn and Coolidge 2012:71-72), as well as (ii) certain technological similarities in tool (levallois) production (Lombard, et al. 2012:136; Wynn and Coolidge 2012:50-51), and lastly they share (iii) a lack of objects of pictorial and figurative art, grave goods and unequivocal symbolic objects (Wynn and Coolidge 2012:119).

This means that some traits described as modern in the MSA record do not exclusively belong to anatomically modern humans. The same traits are also then demonstrated to not necessarily demand language as we know it, as Neanderthals are generally agreed to not have had this ability (Wynn and Coolidge 2012:130). Behaviour such as the potential use of pigments and ornamentations, advanced lithic production sequences, hafting of tools, and flexible hunting strategies are demonstrated in Neanderthal materials (Boëda, et al. 2008; Villa, et al. 2010; Wurz 1999; Wynn and Coolidge 2012:119-120). However, bone tools and heat treated lithics are recovered from the MSA, and while not abundant, they have never been recovered from Neanderthal assemblages.

Neanderthals are often cited as fundamentally different from modern day humans, while still behaviourally complex and advanced in terms of the factors mentioned in the previous paragraph (e.g. Johanson and Wong 2009:240-243; Stringer 2012:144-157; Tattersall 2012:181; Wynn and Coolidge 2012:178-188). The technology of Neanderthals (Mousterian) and MSA people are by Klein (2009:485-500) paralleled in certain technological respects, and while no Neanderthal bone tools or heat treated lithics are procured they arguably retouched more tools than MSA people (Klein 2009:521). From Klein's standpoint, this must mean that MSA peoples were as advanced as Neanderthals, or that one would not need to be culturally modern to create the MSA lithics. It goes to show that when the debate is extended to include themes not often addressed, new explanations for MSA behaviour are plausible. To argue that lithic production or the use of mastic to haft tools must have involved language have repercussions connected to other active debates. These particular questions resembles the debate of whether or not Neanderthals were modern. As emphasized by Conard (2008:177), Neanderthals could of course have been culturally non-modern, but archaeologically very close to culturally modern humans. Conard simultaneously underlines, that they were advanced enough to survive in Pleistocene Europe. The Neanderthal archaeological record demonstrates the difficulty of gauging modernity when assemblages with many technologically culturally modern features are agreed to not demonstrate the communicative behaviours widely demanded for cultural modernity. This technological resemblance underlines very different views surrounding advanced tools procured from the MSA, and a consensus that in the case of Neanderthals, language as we know it was not included in the production and maintenance of the observed lithic technology.

Soressi (2005) argues that cultural modernity must be further separated from anatomical modernity; planning and maintenance of ideas is visible in Neanderthal assemblages, and as such Neanderthals had capabilities for certain behaviours that became the norm in later populations. If archaeologists would consider this debate in relation to the southern African MSA, they would have to consider a different solution for cultural modernity; That MSA humans of southern Africa were fundamentally different from us in their cultural expressions, without this meaning that they were less advanced or developed. Without recognizable cultural expressions, qualitative comparisons for the purpose of mapping cultural modernity in the MSA would be impossible, as our perception of cultural modernity is linked to our behaviour today. Perhaps Wurz (2008:152) is right when she states that symbolism defines what it is to be uniquely human, but as demonstrated, looking for symbolism in the MSA record rarely leads to a satisfying consensus. The important factor is presently that arguing for advanced forms of

communication in the MSA would necessitate the inclusion of other debates, containing as few answers as the debate addressed here.

Language is a specific feature used to argue for cultural modernity at Klasies River Mouth and Blombos Cave through dispersal of technological knowledge of lithic production and ochre procurement (Wurz 2008:153), and the spreading of ideas to produce ochre patterns and bone tools (Henshilwood, et al. 2001:668). Language is also argued to be a factor in the learning process of hafting tools by mastic at Sibudu Cave (Wadley 2011:105). The argument for language is applied as a certain feature of cultural modernity, and by arguing that the behaviour traced in the stone tool production demands a transferring of knowledge, language is argued to be present together with cultural modernity. In addition to the problematic connection to similar Neanderthal behaviour, I would like to demonstrate how the seemingly safe argument of language, even if it were safely observed in MSA lithics, might be so complex as to not bring the debate forward at all. For more debates about language and symbolic objects see for example Rudolph Botha (2010), and his views on language in the MSA.

Michael A. Arbib (2012), an interdisciplinary scholar of computers and brain functions, separates language into proto-language and language. He argues that the abilities of proto-language are biological, and developed gradually prior to the emergence of *Homo sapiens*. The development from complete proto-language in *Homo sapiens* (the language-ready brain) to fully syntactic language demands no further biological development. Language is to Arbib a cultural phenomenon, an invention, seen to be complete around 50-60 kya. He compares this with the ability to play videogames, an ability only present in the later generations that most certainly did not follow a biological change in brain structure. Proto-language contains several features linked to communication, while complete language contains features of adaptability and context such as full syntax, recursion, past and present tense etc. It is clearly debatable whether these features are necessary in the production of MSA lithics.

Arbib's arguments are productive when addressing the argument of language in the Klasies River Mouth production of lithics, as the communication needed might fit the model of proto-language, or of partially developed proto-language. As a way to transfer knowledge, Arbib supplies *complex action recognition* and *imitation*, as well as *intended communication* and *sharing of meaning* as possible answers, in addition to a certain form of ability to plan ahead and remember past events (Arbib 2012:162-170). These factors all demonstrate how knowledge can be transferred without the presence of full syntactical language, which Arbib (2012:329) argues emerged at least 100 000 years later than the emergence of *Homo sapiens*. The interpretation of planning is ambiguous, as certain animals store food and remember the

location, which could be confused with cultural modernity in the archaeological record. Thus, a feature such as language is demonstrated to potentially not be a safe argument, as it must be argued that language is present and that the present language is in fact representative of cultural modernity.

Arbib's arguments are applied to demonstrate how a feature such as language opens up for more discussions, simply because no one, including Arbib, knows the answers to language evolution. This demonstrates that all that can be inferred, is that the archaeologically visible culture of the MSA contained certain features of what we today call cultural modernity. The archaeological difference between the Upper Palaeolithic might, and might not, mean a difference in behavioural capabilities. Perhaps the MSA people were culturally modern, and perhaps they were not. It also demonstrates how this is not an archaeological discussion, this is a discussion about defining language.

Dubreuil and Henshilwood (2013) have stated an initial agreement to several of Arbib's points, but disagree in certain respects. The authors point out that Arbib has defined prolonged infancy, large game hunting, planning, and food sharing, to be necessary features to develop a language-ready brain, but that these features emerge prior to the development of *Homo sapiens* (Dubreuil and Henshilwood 2013:258). Dubreuil and Henshilwood argues that the social behaviours prior to *Homo sapiens* display a language-ready brain, and they disagree with Arbib in that these earlier humans had a limited set of language and gesture abilities. Dubreuil and Henshilwood point to the evidence from the African MSA, to argue against Arbib's view of a later emergence of language. The archaeological record is not displaying a sufficient change, according to Dubreuil and Henshilwood (2013:254), to reflect a behavioural change 50-60 kya, while Arbib argues that the tools and potential symbols of the MSA might very well exist without such a modern feature as complete language. The result of the disagreement is minimal, yet critical; MSA humans are by both parts interpreted to be essentially modern, but the lack of fully syntactical language makes humans expressively culturally non-modern, while all anatomical and cognitive abilities are present.

This disagreement is fundamentally different from that concerning for example Richard Klein. Instead of discussing whether MSA humans were biologically modern, the discussion concerning Arbib is whether cultural modernity can exist without the presence of all features of human cultural life observed today. Central questions would be at what point in time it is possible to observe cultural modernity, and what behaviour exactly is demanded for cultural modernity to exist? A key point in Arbib's (2012:344) argumentation is that languages keep evolving. As abilities to surf the web or play videogames evolve, as do language, which means

that finding an archaeological representation of modern language as we know it, is problematic. My interpretation of Arbib's arguments is thus that the cultural modernity of MSA humans does not rely on language abilities. This is a potential case of incommensurability; cultural modernity is by several archaeologists (e.g. d'Errico, et al. 2005:20; Wurz 1999:34, 46; 2008:153) argued to exist on the basis of language, that the culture observed in the MSA demands full language. As demonstrated here, the argument might be viewed from the other direction, to mean that language as we know it is a gradual response to (culturally) modern technological innovations. As Arbib himself explicitly states (2013), neither he or Dubreuil and Henshilwood can give a definite answer to the question. Arbib (2013:308) interprets this particular discussion as "consistent with the bricolage view of language emergence". Citing language evolution as one of the driving forces behind the emergence of cultural modernity, while at the same time stating both the difficulty of ascertaining the developmental chain and the difference between language and speech, is not unknown (Shultz, et al. 2012:2138). This is related to Arbib, and there is still no solution to the problem of recognizing language instead of speech or proto-language in archaeological sources.

Advanced Subsistence Behaviour

Marine and terrestrial subsistence adaptation – It has been demonstrated how certain practice communities argue for an observable knowledge of the environment, and a use of resources representing adaptability and cultural modernity. Both marine and terrestrial food procurement is included when arguing for cultural modernity, but due to it being more discussed, the marine resources will be addressed here.

Klein states, in relation to the flourishing of symbols at 50 – 60 kya, that it is only around this time that it is possible to demonstrate true adaptive behaviour, such as fishing (Klein 2013). He further argues that true knowledge of the environment arrives as a package, together with the rapid growth of symbolic and abstract objects and depictions, linked to a genetic change. The general argument is however, that MSA people were behaviourally more static, and that both technology and food procurement strategies remained less effective than in the LSA and Upper Palaeolithic. This is based on the disappearance of innovations after the Stillbay and Howieson Poort, and stable shell fish numbers in the MSA. These would arguably fluctuate as a result of over-exploitation (Klein and Steele 2013). At for example Pinnacle Point it is argued that people living in the MSA most likely had knowledge and abilities to adapt to the environment. Sea food resources at Pinnacle Point demonstrate that people adapted and

moved in relation to where nutrition could be found. In addition, it was highlighted in the previous chapter how technological analyses at Sibudu Cave and Klasies River Mouth are used to argue that technological ideas and advances persisted over time, changing characteristics but not the underlying technological knowledge. Nevertheless, Klein (2009:644-645) points to a range of features that differs between the MSA and Upper Palaeolithic archaeological record, but one of them is that MSA populations lacked the ability to fish.

Sealy and Galimberti (2011:405) argue that shellfish gathering and the variability observed in the archaeological record must be seen in light of environmental factors, instead of simply focusing on human behavioural choices. The authors point out that shellfish growth rates have remained constant from the MSA to the LSA, and do not disregard Klein's argument of human populations remaining small due to their inferior nutrition gathering abilities (Sealy and Galimberti 2011:415). However, the authors point to the growing numbers of material evidence for cultural modernity in the southern African MSA to ask why the MSA populations did not gather more of the easily accessible seashells if they were (probably) culturally modern? Sealy and Galimberti proposes other explanations to this low degree of shell-gathering in a seemingly culturally modern cultural context, namely that the environment played a big role for the archaeological record of the shells. If MSA people were culturally modern, this particular record could still be disturbed, so to speak, by environmental factors that inhibited either sea-shell increase/decrease, or humans abilities/desire to gather them. This particular disagreement is an example of a purely archaeological debate with interpretations closely connected to the material, and with more research one of the explanations might be more likely to be correct.

Curtis Marean (2011) argues that the foraging of shellfish is not a result of lacking abilities, but rather a result of the development of full cultural modernity. He argues that at for example Pinnacle Point, an adaptive behaviour is exactly what is observable during the cold periods around 164 kya. Marean argues that cultural modernity was already in place, with a sufficient degree of working memory to adapt to the gathering of sea resources. Marean links this behaviour to Coolidge and Wynn's enhanced working memory, and as demonstrated in the analysis argues that shellfish gathering demands extended environmental knowledge. As such, Marean does not take account of the size or number of populations when arguing for cultural modernity, which were central to the previous argumentations.

Marean and Klein represents the poles of this particular debate, and Sealy and Galimberti are in a diplomatic middle; they do not disregard Klein, but proposes other explanations that are more in line with the totality of the South African MSA research. This

latter position is as mentioned an archaeological debate, where different practice communities provide answers to an archaeological question, and future research may solve the riddle. The disagreement between Klein and the Pinnacle Point practice community on the other hand, has different characteristics. The archaeological materials are used to answer both views; the lack of fishing and the constant population levels are argued by Klein to be representatives of a cognitive lack of cultural modernity, while e.g. Marean chooses to focus on the mental abilities embedded in sea food gathering. This disagreement in interpreting MSA peoples use of the sea presents challenges on a fundamental level, which are to some degree incommensurable. Both the Pinnacle Point practice community and Klein relies on an archaeological record, but neither of the interpretations are visible in the archaeological record. This resembles the factors of discussion outlined early in this chapter; the problems with arguing for mental capabilities are equal. These arguments are not observable and must be explained by going through disciplines such as cognitive evolution. Similarly, different models of explanations from these disciplines can be applied to disagree,

Another challenge in the argumentation from the Pinnacle Point practice community is that Curtis Marean explicitly cites Wynn and Coolidge and their encouragement of applying enhanced working memory as a behavioural model, and elaborates how the Pinnacle Point evidence is related to cultural modernity (Marean 2011). He does not comment on the applicability of Wynn and Coolidge's strict standard at Pinnacle Point. As underlined in the analysis, the numbers of finds at Pinnacle Point is argued to be substantial enough to have demanded stable shorelines and continuous collecting, what could be known as managed foraging. Wynn and Coolidge (2009:122-124) does actually cite managed foraging as a sign of cultural modernity, but they do simultaneously state that evidence of this predating approximately 30 kya is equivocal. Here, Marean applies a method of recognizing cultural modernity in the archaeological record, but he ignores a central part of the method, argued by the inventors to be of utmost importance. In addition, Wynn and Coolidge disagree with MSA cultural modernity on the basis of the same method.

On certain levels, this is an example of disagreement over interpretations of materials, such as if fishing or complex hunting patterns might be interpreted earlier than what Klein states (C. S. Henshilwood, et al. 2001:443; Stringer 2012:112). The challenge arises when one type of behaviour is explained by different models of behaviour, which in turn leads to the appearance of widely different behaviour patterns. When applying the material record and pointing towards a change in materials 50-60 kya, there is a clear difference in the assemblages from the Upper Palaeolithic and MSA. However, the Pinnacle Point practice community is

arguing differently, pointing to cognitive models explaining the behaviour embedded in food gathering. This does not represent a disagreement, as much as it represents a fundamentally dissociated model of explanation. The behaviour of pre-existing populations is interpreted on the basis of completely different standards.

7. Concluding Remarks

The goal of this thesis was to explore *what role practice communities play for the understanding of cultural modernity in the southern African MSA*. The practice communities are demonstrated here to be *localized clusters of interdefined terms*, and unique to each of the case studies. To begin to address this, two more questions were asked, and I answered them through chapter five (*analysis*) and six (*discussion*). Let us first address the question of *how specific practice communities are connected to different contents of cultural modernity*.

Each of the case studies are by their practice communities connected to specific features of cultural modernity (see table 4 for the features addressed). These features are central to demonstrate that cultural modernity is a variable concept, and based on different standards of definition. It became evident through the analysis that cultural modernity is not a single feature that is at certain times procured from the archaeological record, and is clearly not tied to an archaeological object that is discussed because of mixed stratigraphic layers or other archaeological factors. Cultural modernity is regarded as a behaviour embedded in the production and maintenance of a variety of archaeological materials based on a range of interpretations and explanations, such as social identities, abstract patterns, or knowledge about environments or lithic production. The practice communities present at the case studies argue for cultural modernity, but they do not argue for the presence of the same factors.

Through chapter five, it was analysed how these specific practice communities are connected to the different contents of cultural modernity, and demonstrated how they are connected to this suite of behaviours by unique explanations and interpretations. *The role practice communities play for the understanding of cultural modernity* was also partly revealed; cultural modernity is inferred from variable archaeological materials and a variety of interpretative methods. There is no common understanding of cultural modernity, and no common interpretative process to reach this conclusion. The definition of cultural modernity is often cited as the actual issue, and not the archaeological materials. This should come as no surprise, when a potential consensus is based on a different archaeological and interpretative basis.

The next question discussed was *how the contents of cultural modernity are understood in a wider context*. Firstly, let me acknowledge that some of the examples addressed have an archaeological character. The shellfish population sizes at Pinnacle Point may currently be explained by small human populations, but whether these populations succumbed to

environmental factors or were behaviourally archaic may be answered in future research. Certain of the lithic interpretations addressed are also often quite archaeological; the meaning behind for example technological development is always an issue in archaeology. On the other hand, many examples are given where the discussions are not archaeological, where the interpretations rest solely on explanatory models from other disciplines instead of the archaeological materials. As demonstrated, there is a common use of arguments from disciplines containing no definite answers for archaeology. Explanations build upon e.g. language evolution, which is by its experts admitted to display a range of different explanations and theories. Other arguments rests on untestable and unobservable physical/mental changes. In addition, *archaeologists* are discussing and applying these explanations within archaeology, not linguists, psychologists etc.

To me, this is a conundrum as archaeology has a strength in the material record, it is one of few disciplines with empirical and observable objects from the time in question. Thus, one may question that a discipline with an empirical and observable record should apply tentative theories and untestable and unobservable explanations to legitimize interpretations concerning behaviour. I am not proposing that archaeology should not pursue a multidisciplinary approach, only that archaeology should seek assistance where answers can be found. Biology, genetics, geology, etc. may provide answers, the task is only to interpret and apply them as correctly as possible. In connection to archaeology, cognitive archaeology, psychology, linguistics etc. have no answers to begin with. The interpretations that follow are as demonstrated dependent on the value one places upon the initial discipline, and which standpoint the researchers maintain.

I argue that the real problem is more fundamental than the definition of cultural modernity. This is demonstrated by the nodal points, and the idea that they are constituted by the discourse applying them. The nodal points, or the argued features of cultural modernity, are in most examples constituted by working explanations. In the wider context, the contents of cultural modernity are understood variably, and by applying different explanations the nodal points are no longer necessarily features of cultural modernity. Following explanations of socially shared meanings, it is true that e.g. beads are symbolic, which is a feature of cultural modernity. It is also true, by the explanations of the beads as directly connected to value, that they are not symbols at all, or that by ascribing them a status of tallying devices they represent stored information, but are not mediators of cultural modernity. The non-utilitarian characteristic of objects is observable in the material record, but the argument stating that this

represents cultural modernity is resting on little else than untestable arguments from external disciplines.

The main problem is not archaeological, but lodged within theory of science. This is on account of Incommensurability, which is a central feature within the dispute. Many of the discussions addressed here cannot be solved by archaeology, as their arguments are founded on other disciplines and based on widely different standards. Several examples demonstrate this incommensurability, how one view will not replace another, and how both views represents the truth from their own standpoint due to widely different standards of definition, for example in the use of cognitive archaeology. This incommensurability is also a result of the untestability of the applied arguments, a result of the interpretations being unfalsifiable. Garofoli and Haidle (2014:20) are explicitly discussing the case of incommensurability within fields applying cognitive archaeology. A challenge of cognitive archaeology is explicitly said to be the lack of a connection between the archaeological material and pre-historic minds, and as such, little to no testability exists (Garofoli and Haidle 2014:12). However, certain examples do not display any potential incommensurability, for example a number of the arguments concerning advanced social behaviour. Many of these interpretations are often based on the presence of heavily discussed phenomena, often symbolism, and they are as such not replicated as arguments for cultural modernity by other practice communities in the same discourse. As demonstrated, this may also lead to similar results being interpreted differently.

I previously stated my reliance upon epistemology. From the outset, I was aware that interpretations would always represent the standpoint of the researcher, a well-known and discussed factor of archaeological interpretations. Within the dispute over cultural modernity on the other hand, there is no underlying presence of an inevitable phenomenon. There is an active use of suitable explanatory models, to explain empirically unobservable features. Epistemology is as relevant as in all of archaeology when for example criticising an archaeologists' initial interpretation of perforated ostrich eggshells as containers, or a crescent as a potential arrowhead. A problem emerges when the proposed culturally modern behaviour behind these perceived objects is argued for through untestable arguments and disciplines that are unable to give clear answers. The dispute over cultural modernity consists of more than an archaeological case of an ever-occurring interpretative phenomenon.

The contents of cultural modernity clearly have such different understandings in the wider context that they fluctuate between clear evidence of cultural modernity, and evidence of a behaviour simply resembling certain features of this totality. To answer the main question, the practice communities play a pivotal role for the understanding of cultural modernity in the

MSA. Cultural modernity exists, or does not exist, only on the basis of the arguments applied by the actual practice community, and both sides present the truth seen from their own standpoint. This pivotal role of practice communities is demonstrated to be a challenge in a selection of central discussions, where a consensus cannot be reached unless one side dismisses their own views. This can be reached by new archaeological materials, with observable features of cultural modernity. The current objects being discussed cannot be used to reach an agreement, as the interpretations of cultural modernity are not observable in them, and the views surrounding these interpretations are incommensurable.

In my view, there is a need to return to interpreting what is observable in the archaeological record, instead of arguing for the unobservable. As an example, several aspects of the production of tools are observable in lithic materials, where varieties and change can be attributed and observed. These features are present in the archaeological record, and archaeology is needed to explain the observations. Disagreements may of course ensue, but then concerning the archaeological interpretations. To argue for e.g. symbolism or advanced social behaviour on the other hand, is to argue for something that is not visible in the record, and disagreements are based on preferred models of explanation. This was demonstrated in the use of Arbib's arguments on language interpretations, or in Wynn and Coolidge's criticisms. When a tool is recovered, technology is present, when a cave painting from the Upper Palaeolithic is recovered, depiction of a certain motif is present. When incised ochre is recovered, non-utilitarian engravings are present. Cultural modernity is only observable through chains of inferences and application of other disciplines. The only reason there is a general consensus on the presence of cultural modernity in the Upper Palaeolithic and later, is the wealth and variety of directly observable archaeological categories, such as advanced technology, art, deliberate burials with grave goods, etc. Cultural modernity is not directly observable in the Upper Palaeolithic.

If the qualitative arguments for cultural modernity at single sites is ignored, archaeology has in my view still provided enough evidence to quantitatively narrow the gap between the MSA and Upper Palaeolithic, and there is little to no reason to expect that MSA people were behaviourally inferior to Upper Palaeolithic people. However, the archaeological record is displaying very different cultural expressions, substantial enough to be worthy of discussion.

Defining Modernities

Archaeology may provide a wealth of information concerning pre-historic populations, but perhaps not on the time and place humanity became culturally modern.

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